EVIDENTIARY HEARING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Application for Certification	)	Docket No.
Mirant Delta's Contra Costa	)	00-AFC-1
Power Project	)	

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

WEDNESDAY, APRIL 25, 2001

2:05 p.m.

Reported By:
Valorie Phillips
Contract No. 170-99-001

COMMITTEE MEMBERS PRESENT

William J. Keese, Chairman, Presiding Member

Michal C. Moore, Commissioner, Associate Member

Terry O'Brien, Commissioner Advisor

Melissa Jones, Commissioner Advisor

Garret Shean, Hearing Officer

STAFF PRESENT

Lisa DeCarlo, Staff Counsel

Cheri Davis, Project Manager

Priscilla Ross, Public Advisor's Office

APPLICANT

Emilio E. Varanini
Livingston & Mattesich

Mark Harrer, Project Director

INTERVENOR

Tony Chapman, Sportsmen's Yacht Club

I N D E X

I N D E X

P R O C E E D I N G S

PRESIDING MEMBER KEESE: Call this hearing on the Contra Costa Power Project to order.

I'm Bill Keese, Chair of the -- of this Committee. Commissioner Michal Moore will be joining us shortly.

To my far right is Terry O'Brien, my advisor, and our Hearing Officer, Garret Shean.

As we start here, could we have the parties identify themselves, please, starting with the Applicant.

MR. HARRER: Mark Harrer, Mirant California LLC.

MR. VARANINI: I'm Gene Varanini. I'm with the Law Firm of Livingston and Mattesich, and I'm project counsel for Mirant Contra Costa LLC.

PRESIDING MEMBER KEESE: Staff, please.

MS. DeCARLO: Lisa DeCarlo, Staff counsel for the Energy Commission.

MR. KANEMOTO: William Kanemoto, consultant for the Energy Commission.

PRESIDING MEMBER KEESE: Thank you. And I will mention here that you have to get within about an inch or two of these microphones to make

them work, so it seems like you're going to swallow it, but you've got to get up there.

MR. WALTERS: William Walters, consultant with the Energy Commission.

MS. DAVIS: Cheri Davis, Project Manager for this case for the Energy Commission.

PRESIDING MEMBER KEESE: Thank you.

Do we have any Intervenors, please.

MR. CHAPMAN: Tony Chapman, Sportsmen's Yacht Club.

PRESIDING MEMBER KEESE: Thank you.

Do we have any representative of government agencies?

Seeing none, this is a largely uncontested case. Mr. Shean, would you take over, please.

HEARING OFFICER SHEAN: Thank you, Mr. Chairman.

Let me also indicate that we are operating a teleconference hookup so that other parties or interested public, either from the Contra Costa area or, I guess, technically, anywhere within the State of California, can be participating in the proceeding.

There are a couple of things I would

like to do preliminarily, and then we will move to taking the uncontested declarations, which will largely be the AFC and the data responses from the Applicant, and the FSA and its supplement from the Staff.

Let me indicate that part of our purpose, since the Committee Workshops were conducted in the local area, has been to process this case with the enhancement or modification offered by Mirant, in the timeline that would otherwise have applied to this case, which basically means concluding it during the month of May in order to make the 12 months.

In order to do that, the Committee put out an order directing the Staff and inviting the Applicant to propose draft language for the Presiding Member's Proposed Decision. What we ultimately worked out with -- within the agency here is to have Aspen, which has acted as a consultant in various proceedings for the Commission Staff, offer the services of employees who are not directly related to this particular proceeding, to assist in that.

They have done so, using the format that was used in the Huntington Beach case and the

Mountainview case. And I have received an electronic copy of that today.

What I propose to do, and I have burned two disks, one here for the Applicant and another one for Mr. Chapman, is to offer them to you so that you can review them and see if -- basically, if you find that there are any sort of gross mistakes. I think what we sort of envisioned, given the time that is available to us, is to get the Presiding Member's Proposed Decision issued and served on Monday, which will be April 30th.

I have no illusions, given that extremely limited amount of time, that we can turn out the kind of product that we think is 99.9 percent perfect. But I think the major point is we -- what we want to try to avoid is any gross either errors of fact or misstatements of fact that would turn any revisions of the PMPD into a, quote, revised PMPD under the regulations, which would kick in an extension of the 30-day review period.

So that's the purpose in offering this to you, and if you can, please turn it around and give us any -- me any comments by my e-mail address any time up until probably noon on Sunday.

So with that, let's move now to the uncontested matters. And then what I propose to do with respect to the Visual Resources issue, and this is pretty much limited to the cooling tower plume, is have the parties offer essentially a direct and rebuttal presentation, and only if it appears necessary to the Committee do we think we need to be involved in extensive cross examination.

It appears, from our reading of the documents which are before us, is that we have a general understanding both of the Staff's position and the Applicant's position. We understand that this is a combination of a modeling exercise and the best professional judgment as to what will occur. As -- as well as some -- to some degree, a reflection of the historical records of the meteorological conditions at the site. And that cross examination is probably not going to give us the kind of conclusive information that is significantly better than the information we'll get from the direct and rebuttal presentations by each party.

So that's what we kind of plan at the moment. So let's begin now with the Applicant and

the presentation on its uncontested matters.

MR. VARANINI: We call Mr. Mark Harrer. And he needs to be sworn.

HEARING OFFICER SHEAN: All right.

(Thereupon Mark Harrer was, by the Reporter, sworn to tell the truth, the whole truth, and nothing but the truth.)

TESTIMONY OF

MARK HARRER

called as a witness on behalf of the Applicant, having first been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. VARANINI:

Q Mr. Harrer, would you tell the Committee what your background is, and what your responsibilities are with Mirant?

A I'm the Project Director for the Contra Costa project.

Q And what's your academic training?

A I'm a mechanical engineer.

Q And what experience have you had with power plants before you were retained and employed by Mirant?

A I operated -- I was a General Manager and operated several plants, worked in business development, have been in the industry for about 12 years.

Q And I'm going to read off a list of materials, and I'm going to ask, for each of them, and I think you can withhold your answer until I get done, but what I'd ask you, then, is whether they were prepared by you or under your supervision.

The first is the Application for Certification for Contra Costa Power Plant Project, and it is 1/31, 2000.

A Yes.

Q The Applicant's Air Quality and Public Health modeling files, provided by disk on 3/23, 2000.

A Yes.

Q The Applicant's Application for Renewal of the NPDES permit, California 0004863, 4/03, 2000.

A Yes.

Q The Applicant's response to information requested from the BAAQMD for Application Number 1000, authority to construct, on 4/18, 2000.

A Yes.

Q The Applicant's supplemental information response to CEC Data Adequacy Request, confidential designation, of 4/18, 2000.

A Yes.

Q The Applicant's application for authority to construct, submitted to the BAAQMD on March 3rd, 2000, responses to information on 5/04, 2000.

A Yes.

Q The Applicant's Revision 5, Multi-Species Habitat Conservation Plan of 6/30, 2000.

A Yes.

Q The Applicant's address change of 7/20, 2000.

A Yes.

Q Applicant's request for confidential treatment of offset information on response to CEC's Data Request Number 3, of 8/18, 2000.

A Yes.

Q The Applicant's visual renderings, KOP's Number 2, 4, 7 and 8, in response to Data Request Numbers 61 through 75, 8/18, 2000.

A Yes.

Q The Applicant's response to CEC Data

Request Set 1, Numbers 1 through 118, of 8/18, 2000.

A Yes.

Q The Applicant's supplemental information regarding emissions offsets of 9/13, 2000.

A Yes.

Q The Applicant's supplemental response to the Staff's Data Requests Numbers 104, 105, of 9/15, 2000.

A Yes.

Q Application for confidential designation pertaining to operation costs associated with alternate cooling technologies, of 9/18, 2000.

A Yes.

Q Applicant's responses to CEC Data Request dated 9/15, 2000.

A Yes.

Q They were filed 10/13, 2000. Applicant's response to Data Request Number 164, by disk, on 10/18, 2000.

A Yes.

Q Applicant's response to CEC Data Request dated 9/15, 2000, Appendix C, Determination of Eligibility for the Contra Costa Plant and corrected replacement pages on 10/20, 2000.

A Yes.

Q Applicant's information re aquatic filter barrier water flow, the volume figure, on 11/06, 2000.

A Yes.

Q Applicant's comments on the Preliminary Staff Assessment 12/15, 2000.

A Yes.

Q Applicant's responses to CEC Data Request, Set 3, Number 168 and 182, dated 2/02, 2001.

A Yes.

Q Applicant's response to CEC Data Request Number 176, 2/05, 2001.

A Yes.

Q Notice of name change of Applicant and owner, on 2/07, 2001.

A Yes.

Q Applicant's response to CEC's Data Request, Set 3, Numbers 171 and 176, on 2/09, 2001.

A Yes.

Q Applicant's submittal of enhanced site plan, air quality impacts analysis, 4/9, 2001.

A Yes.

Q Applicant's response to information requested at FSA Workshops on sound levels and response to CEC questions on 4/12, 2001.

A Yes.

Q And Applicant's Air Quality modeling file for the enhanced site plan, 4/13, 2001.

A Yes.

Q Is all this information correct or true, to the best of your knowledge?

A It is.

Q And are you able today to support moving this -- these materials into evidence?

A I am.

MR. VARANINI: I move all the following materials into evidence, and to the extent there are any questions, Mr. Harrer is available for cross examination.

HEARING OFFICER SHEAN: Okay. Is there objection to admission into evidence of the items listed by Mr. Varanini?

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: Okay. It will be admitted, then.

MR. VARANINI: We have four other pieces of information that we're trying to submit to the

record today, and they are various pieces of materials that were requested, and that we are filling in the blanks.

BY MR. VARANINI:

Q And Mr. Harrer, are you familiar with the letter dated March 28th, 2001, from the Applicant to the Army Corps of Engineers, regarding permit for aquatic filter barrier?

A I am.

Q And are you also familiar with a letter dated April 23rd, 2001, from the Applicant to the Department of Water Resources, regarding the effects of DWR pumping facilities?

A I am.

Q And are you further aware of the stipulation between the Applicant and Sportsmen's Yacht Club?

A I am.

Q And are you further, and finally, aware of the visual simulations requested at the FSA Workshop?

A I am.

Q And are those materials true and correct to the best of your knowledge?

A They are.

Q And are you prepared to sponsor them in testimony?

A I am.

MR. VARANINI: I would move those four documents, as well, into evidence.

HEARING OFFICER SHEAN: Is there objection?

Absent an objection, they're admitted.

MR. VARANINI: And Mr. Harrer is available for any cross examination, or any examination by the Committee.

HEARING OFFICER SHEAN: With that, I think what we'll do is move to the Staff and get their FSA, and amendments to the FSA in.

MS. DeCARLO: Included in our FSA are declarations by each of the authors of the testimony. So we would just like to move the FSA in, the supplemental testimony in with that.

HEARING OFFICER SHEAN: All right. So that's the FSA and -- and this Energy Commission Staff Supplemental Testimony --

MS. DeCARLO: Yes --

HEARING OFFICER SHEAN: -- dated 4/20?

MS. DeCARLO: Yes.

HEARING OFFICER SHEAN: Okay. Is there

objection?

MR. VARANINI: No objection.

HEARING OFFICER SHEAN: Hearing no objection, then the Staff's FSA and the Staff's supplemental testimony dated 4/20 are admitted.

Let me just ask. Mr. Chapman, did you have anything you wanted to introduce by way of evidence?

MR. CHAPMAN: Nothing.

HEARING OFFICER SHEAN: Thank you.

All right. Let's move on, then, to the two elements that I think -- and maybe there'll be a little more that will develop. But I understand, first of all, there's a disagreement with regard to these Cultural Resource conditions. Is that still the case?

MR. VARANINI: Yes, sir.

HEARING OFFICER SHEAN: Okay. And to encapsulate the issue, it is that on Cultural Resource Conditions 1 through 4, the Applicant's requesting that the timelines for the submittal of information, which are currently 90, 75 and 60 days, all be reduced to 30, and the Staff has indicated that the reduction to 60 would be all right with the Staff. Is that --

MS. DeCARLO: Yes, 60 days is fine for Cultural 1 through 4.

HEARING OFFICER SHEAN: Now, there's a lot of the problem revolved around the Cultural Resources -- the Mitigation Plan.

MS. DeCARLO: Yes. The complexity of the plan and the length of time required to analyze it, send it back to the Applicant for revisions, analyze the revisions, until a complete document is formed that satisfies Staff.

HEARING OFFICER SHEAN: With regard to the Applicant on this, is there any impediment to your beginning to file any of these materials before we actually get to the decision date on the 30th?

MR. VARANINI: No. We've already begun to file materials. We filed the identification and qualifications of the -- of the experts that would have stop work authority virtually this -- either today or last week, I don't remember which. And one of the problems that we're having is that in order to have a -- a start date in June, we need to have the various plans and instructions to personnel approved as quickly as possible.

One of the factors that -- we realize

the Staff's under a lot of pressure, they have a lot of work to do, but one of the -- one of the situation elements here is a bit different, in that most of the plant is going in on fill, and the fill is going to be basically repositioned and then the -- the bulk of the plant will go down on fill, rather than going into new excavation or -- or properties that were previously potentially asset driven.

So from our perspective, you know, we have a -- a real crisis here, I think, that the Commission, the Committee's going to have to solve, and that is if you want us to get going as quickly as possible, then I think there has to be some additional help to the Staff in order to turn these approvals around. And it'll take us, I estimate now, about five to ten working days to get the bulk of the materials in to the Staff. That puts already past the start date for construction that we'd like to -- that we'd like to hit.

PRESIDING MEMBER KEESE: So you're -- you still have a problem with the Staff's dates?

MR. VARANINI: It pushes us back about 30 days on -- on the mobilization and start date,

or --

PRESIDING MEMBER KEESE: That would be if you didn't file until the decision came down.

MR. VARANINI: No. It's if we file within -- we already filed on the qualifications, and we will file within ten days on the -- on the plans and the various detailed work that the Staff wants. But we still will miss the current start date by about 30 days.

PRESIDING MEMBER KEESE: Well, as I understood it, it's the difference between 30 and 60 days, isn't that the --

MR. VARANINI: That's correct.

MS. DeCARLO: If I can emphasize that just because we have the 60 days in there does not mean that Staff will take 60 days to review. If the Applicant provides us with a perfect copy of the plan and Staff will be able to review it in a short time, no iterations will be necessary, and they'll be able to approve it and the Applicant can start. The 60 days just gives us the leeway to send it back for iterations, if it is not perfect.

RESIDING MEMBER KEESE: Okay. I will say I -- I thought you did a noble job of

attempting to establish, on behalf of Staff, that if we use your dates the Applicant can bank on it and start construction the next day. And if we use any other date, the Applicant can't bank on it.

But I'm having -- seeing concrete dates slip, I -- I'm not sure how an applicant can bank on any date we really give them, so I don't -- I really don't see how a date that you're giving us is -- is that sacred.

However, I believe I would give quite a bit of weight to the fact that Applicant can apply before we've issued a ruling and start the clock running.

We'll take this under consideration, and I will consult with Commissioner Moore on this. And we'll come up with an answer.

MS. DeCARLO: Thank you.

HEARING OFFICER SHEAN: I should indicate, however, when we were working on some of the innovations in the process that applied to both this case and the Mountainview, one of the questions asked was whether or not we could have model plans of some of these routine plans that have to be submitted. The Cultural Resource plan

is one of them, the -- to some degree, the Biological plan, and there are other plans, so that we could basically have model plans which any applicant could refer to and do whatever minimum customization is needed, so that the kind of timeframe and the specialized work from case to case is not necessary, if we can get all the elements of most of the plans we've had submitted to date pulled together and used as -- as a public resource.

But anyway, we'll take the matter under submission, and have our decision reflected in the PMPD.

With that, why don't we move to the Visual Resource issue, and we'll begin with the Applicant. And what we'd like to do is have essentially your affirmative presentation, and we'll probably then go to the Staff for its affirmative presentation, and then back to you for a rebuttal presentation.

MR. VARANINI: I'd like to make kind of a generalized opening statement to -- to give you our perspective on what we think the issue is.

When we originally reviewed the Staff's Visual Resource analysis and its concerns, we

realized that there was a significant interest in dealing essentially with the Yacht Club. And we were in a situation where pointblank was probably an understatement in terms of the deployed -- our facility and the private, yet publicly used facilities of the Sportsmen's Yacht Club.

What the company did was it took a hard look at that situation. The Staff was very helpful, and the Hearing Officer was -- kind of assisted in directing us to consider our options. And -- and we moved our project back several hundred feet, and got it away from the -- the literal perimeter of the property and attempted, really, to come to grips with what we thought the fundamental potential impact question was.

We didn't do that lightly. It's -- it's an expensive situation. It takes real effort, and redesign efforts. We were really heartened by the fact that the Staff worked very closely with us, and did, I think, a heroic effort on analyzing the movement of the -- of the site facilities, and some of -- particularly some of the key facilities which required being remodeled, in the air area, in particular.

It's my understanding, we'll put our

witness on in a second, that there -- really, the remaining issue today is focused on the kind of residual visual impacts that come from the cooling towers of the facility, and their relationship to both the immediate environment and then kind of the middle view, or middle ground.

Our witnesses, we have three witnesses today. The first witness is going to talk about the modeling, and how the modeling is both difficult and, in some ways, full of consternation. And that, effectively, his evidence is going to attempt to show you that the models are not as exact as one would want for purposes of making the very narrow and limited calls on a 55 day hour, or a 120 hour impact regime from potential plume impacts, and that -- and other concerns and consternations about the model.

Our second witness is going to talk about what things are crossed and what types of activities or actions can or could be taken in terms of where we are and what the results are for purposes of attempting to re-engineer or redesign the plant. It's not a simple matter, as it may appear on first blush, in terms of controlling

plumes or controlling other externalities, if we get into a situation where we either have to replace equipment, or we have to deploy equipment and then go through the purgatorial experience of seeing whether it works and then redeploying new equipment after the fact.

And I think that it's one thing to talk about cooling towers; it's another thing to talk about backpressures, and redesign of the turbine in the first place.

So that our position, and I think we'll try to demonstrate it as best we can, is that for a very narrow set of values, we will have real financial efficiency, and, in fact, increased emissions exposure.

And then finally, our visual expert will talk a little bit about clouds. I remember -- I don't remember whether Euripides or which of the Greek poets wrote the poem "Clouds", but today, he'll discuss the -- the discounting of the visual impact of the plume in a cloud environment, with some implication about how the situation degrades from a potentially significant situation to a less significant situation, to a de minimus situation.

And that's really what our case is all

about. It's -- it would be funny, and a triviality, except it's not funny, because on the front end of this, the redesign and redeployment of machines run into the millions of dollars. And the implications are you have to run the machines richer, which gets you into a situation where effectively you are producing more criteria emittants and pollutants to have less water vapor in the air.

And those are the kinds of things, of course, that you're charged with deciding and -- and balancing out. And with that, I'll call our first witness, Mark Strehlow, who's with URS Corporation.

And he needs to be sworn.

(Thereupon Mark Strehlow was, by the Reporter, sworn to tell the truth, the whole truth, and nothing but the truth.)

TESTIMONY OF

MARK STREHLOW

called as a witness on behalf of the Applicant, having been first duly sworn, was examined and testified as follows:

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DIRECT EXAMINATION

BY MR. VARANINI:

Q Now, Mr. Strehlow, would you identify who you are and who you work for, and what your background is for the Committee, please?

A My name is Mark Strehlow. I work for URS Corporation. I am an engineer, and I am testifying on behalf of Mirant Corporation.

Q And what is your actual educational background?

A I am a chemical engineer by degree, and by PE registration in the State of California.

Q And could you give the Committee a -- just a very short precis on your experience, types of projects that you've worked on.

A Essentially, I have been involved with performing environmental analyses on proposed power plants, going back to the late 1970's.

Q And do you have a document before you that's your testimony in this case?

A I do.

Q And how many pages is that?

A Four pages.

Q And was this prepared by you or under your direction?

A Yes.

Q And is it true and accurate to the best of your knowledge?

A It is.

MR. VARANINI: I don't know whether you want me to move it into evidence now or go through the process first.

HEARING OFFICER SHEAN: Let's do that.

MR. VARANINI: Okay. I'd like to have his testimony moved into evidence.

HEARING OFFICER SHEAN: Okay. First, is there objection to qualifying Mr. Strehlow as an expert?

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: And is there objection to admission of his testimony into evidence?

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: It's admitted.

BY MR. VARANINI:

Q And, Mr. Strehlow, could you give the Committee a very short summary of the work you were asked to and what the results of that work entailed?

A The Applicant is proposing a wet cooling

tower for this project, and my testimony deals with the modeling of the visible plume associated with that tower, and some of the meteorological aspects of the data that was used in that modeling. And my conclusions, based on review of the user's manual of the model, and review of the output of the model, is that in the extremes at the margins on the far end, in terms of the long plume length which we are talking about in this case, you know, up in the last few percentages, that this model seems to be over predicting plume length.

Q And do you have an example of that, that the -- kind of a layman's example for the Committee to indicate what you mean by over predicting at the margin?

A Well, I'm quoting from the factory user's manual. For visible plume length -- in this manual, it was called the ANL model, for Argon National Labs, who are the authors.

I'll start again. For visible plume length the ANL model predicts within a factor of two for an acceptable prediction within the limits of modeling and data uncertainties in approximately 60 percent of all field cases

tested.

It goes on to say, our model calibration procedure revealed that a significant decrease in the number of very bad predictions could come at the price of a slight decrease in the number of very good predictions. Our calibration procedure was aimed in part at assuring only a small number of very -- very poor predictions.

It says that although this is only on par with the top models in terms of the single statistic, the ANL model is much less prone to over or under predict, e.g., more than a factor of five in error, than the other models tested.

MR. VARANINI: He's available for cross examination, or questions from the Committee.

HEARING OFFICER SHEAN: Do you have any cross first? Do you want to do this as cross, or do you want to -- are you agreeable to the presentation of affirmative cases and affirmative cases. Do you have anything you want to ask of him?

MS. DeCARLO: That's fine.

HEARING OFFICER SHEAN: All right. So just so I can understand --

MR. VARANINI: Mr. Shean, he has one

other example --

HEARING OFFICER SHEAN: Sure.

MR. VARANINI: -- that might be helpful, since if we're not going to -- I think it's probably helpful not to play cross examination --

MS. DeCARLO: I just want to qualify my answer. As long as the Applicant agrees to do the same.

MR. VARANINI: Sure.

MS. DeCARLO: Okay.

MR. VARANINI: He has another -- I think a good example of what he's talking about.

HEARING OFFICER SHEAN: All right.

MR. VARANINI: And then I think then we can bring our next witness on.

BY MR. VARANINI:

Q Why don't you go ahead and just give the example, Mark.

A All right. This example was based on a modeling run that was done at 7,500 kilograms per second, which is the anticipated air flow from the cooling tower proposed by the Applicant.

This model was run using what we're calling the CEC version of the SACTI model, which was provided to URS electronically, approximately

a week ago Monday, I believe.

The model actually takes all the meteorological conditions and tries to fit them into ranges of potential occurrences. And in this case, they found 35 or 36 different occurrences of meteorological data. It then comes up with a calculation of what the plume size should be for each one of these cases, and then it looks at how frequently these cases persist in the meteorological dataset, and comes up with a probabilistic determination of how long these plumes, or how high or how large these plumes are.

So one of the cases in this example, from this -- from this model run, was a meteorological case where they say if the wind is blowing parallel to the long axis of the cooling tower -- a cooling tower is a two cell by five cell array, essentially with a long axis pretty much from the northwest to the southeast -- so if the wind's blowing parallel to that in this one meteorological case, it says, for example, the plume length is 62.4 meters. Now, with the same meteorological conditions, except the wind rotates 45 degrees off of that axis, the plume length is 56.7 meters, essentially the same number.

Now, when the wind shifts to be perpendicular to that axis, it shifts another 45 degrees to blow across the tower, the plume length goes up to 3,446 meters. I cannot explain what this model is doing in that case. It just seems to be counter-intuitive that you get a 50 to 60 to 70 times length in plume when the wind blows just 90 degrees off from what it was before.

COMMISSIONER MOORE: That's not observed data; that's modeled data.

MR. STREHLOW: That's what the model is predicting. Yes, sir.

BY MR. VARANINI:

Q And could you tell the Committee what the -- about the modeling discrepancy on the flow rates and what you did to correct that?

A I'm sorry. I -- can you please restate the question?

A Yes. It's my understanding that we -- at one point, the Staff was critical of us because we used a very large number in terms of the rate of throughput in the plume tower, and we looked at their model. And what was the result of that?

A Yeah. Originally, in the AFC the flow was -- was modeled at 10,500 kilograms per second.

This was an error. The more reasonable number for this kind of a plant is 7,500 kilograms per second. We looked at that with respect to some of the testimony that Mr. Walters submitted as a table of other cooling towers for other plants that are under active review by the Energy Commission and its Staff. And he tried to kind of normalize the emissions, or the air flow and megawatts by coming up with a ratio of megawatts of cooling divided by the kilograms per second of air flow.

And we -- we see that the 10,500 is definitely out of line with that respect, but we did -- looked at that ratio for the new flow of 7,500 kilograms per second, and it is very, very similar, that ratio is very, very similar to the only other power plant from that table that is sited in the Bay Area. And I'd just like to point out that cooling tower sizing is very dependent on climates.

Q And you had the same general problems with the model with the lower flow rate?

A When we did the -- if the lower rate is 7,500 kilograms per second, yeah, the -- the model, the statements that I had in terms of my --

my assertion that it is over predicting large plumes did also occur on that flow rate.

MR. VARANINI: Thank you. He's available for questions from the Committee.

HEARING OFFICER SHEAN: Okay. I think there are none. Why don't we go to your next witness.

MR. VARANINI: We call Valorie Zambito. And she needs to be sworn.

(Thereupon Valorie Zambito was, by the Reporter, sworn to tell the truth, the whole truth, and nothing but the truth.)

TESTIMONY OF

VALORIE ZAMBITO

called as a witness on behalf of the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. VARANINI:

Q Ms. Zambito, could you tell the Committee who you're employed by?

A Mirant.

Q And what are your duties with that company?

A I'm the Director of Engineering.

Q And what is your academic background?

A I'm a -- I have a Bachelor's of Science in mechanical engineering, with a PE in Florida.

Q And could you tell the Committee, give them some examples of your current responsibilities in terms of your engineering leadership?

A Yes. The Engineering Department is responsible for reviewing the design of our power plants, writing technical specifications, and supporting the construction start-up efforts, and long-term O&M support for the various facilities.

Q And did you prepare or have prepared under your direction a document called the Testimony of Valorie Zambito, some, oh, seven or eight pages, that's currently before the Committee?

A Yes, I did.

Q And is that information true and correct to the best of your knowledge and ability?

A Yes.

MR. VARANINI: We'd like to move that into evidence.

HEARING OFFICER SHEAN: Is there

objection to Ms. Zambito testifying as an expert?

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: Objection to admission into evidence of her testimony?

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: That is received.

BY MR. VARANINI:

Q Ms. Zambito, could you summarize your testimony for the Committee, and including in it your assessments of alternatives and the -- some of the planning problems with substituting equipment in the field after observation of its efficacy?

A Yes. Cooling tower plume becomes visible when the moisture and the air on the exhaust side of the cooling tower condenses and becomes basically visible moisture, visible vapor. Hybrid cooling tower and dry cooling are two alternative cooling tower designs that can mitigate a plume.

We looked at the hybrid and dry cooling tower as compared to the wet cooling tower, and realized that there were some -- there were some adverse consequences with the hybrid and dry

cooling tower, a number of -- of different situations. The predominant ones were the loss of -- or decreased energy output of the facility with the hybrid and dry cooling, as compared to the wet. Also, an increase in fuel usage with the hybrid and the dry cooling tower, because of a higher heat rate. Consequently, the more usage of fuel, higher criteria pollutants being admitted to the atmosphere.

So we saw that there would be increased capital costs and increased operations and maintenance costs associated with the hybrid and dry cooling tower designs, and so therefore we concluded that we wanted to go with the wet cooling tower.

And in regards to the question regarding if we were to install a wet cooling tower and make modifications later in the cooling tower design itself, there are a number of changes that would have to be made, significant changes that would have to be made in the design of a cooling tower in going from, say, the wet to a hybrid design. And very -- very large capital costs would have to be expended in order to do that. Schedule impacts in order to do that, downtime on the facility.

So that -- that would not be something recommended, because it's inherent in the entire design of the -- of the cooling tower facility that would have to be changed.

PRESIDING MEMBER KEESE: Very high, means?

MS. ZAMBITO: You're essentially redesigning the entire cooling tower, because the hybrid design has a sensible heat section, and when you do your initial design you have to take your sensible heat section load in combination with your evaporative cooling load, so you're essentially rebuilding the tower. And tens of millions, I think, estimated what cooling towers --

PRESIDING MEMBER KEESE: Ten -- ten millions?

MS. ZAMBITO: A wet cooling tower is on the order of about -- I'd have to check my testimony in terms of what --

PRESIDING MEMBER KEESE: My question is basically are we talking about one million, five million, ten million, or --

MS. ZAMBITO: A -- a number -- no, in excess of five million.

PRESIDING MEMBER KEESE: Thank you.

COMMISSIONER MOORE: Over the cost of the -- of the -- in other words, five million to rebuild -- or ten million to rebuild it, and then five million on top of that?

MS. ZAMBITO: Yes, if you go and install the cooling tower, that's at some cost. You would have an additional in excess of $5 million, I would -- I would guess, to go and make the necessary modifications. More importantly, I think, is the down time on the facility, because you would have to have that cooling tower out of service, in other words, the whole plant, Contra Costa Unit 8 would be out of service during the time that you would make -- be making those modifications. And that is significantly more of an impact.

BY MR. VARANINI:

Q Ms. Zambito, can you tell the Committee --

HEARING OFFICER SHEAN: Excuse me, Mr. Varanini. If I understand, other than the obvious job of cooling the condenser and the -- and the power train system, the other goal, I assume, is to have the return water to the discharge from the

existing units be as least elevated as possible, so that within the terms of your NPDES permit, you are not adding an impact from Unit 8. Is that correct?

MS. ZAMBITO: That's correct, sir. And we were trying to, in looking at the cooling tower, design the best alternative to maximize output, minimize fuel usage, and -- and be the most environmentally friendly design. I think we were pretty creative in looking at how we could do that and not impact the thermal, adversely impact the thermal by going to the discharge of the other existing units.

HEARING OFFICER SHEAN: And so that, is it your view that the design that you currently -- and I'm sure that there are a couple of other factors, number one would be the physical size of the -- in order to get the maximum cooling that's consistent with the engineering needs of the facility, are questions of size of the cooling tower, both the number of cells and the flow rates and things like that. And those issues, of course, have other impacts, such as visual appearance of the -- of the cooling tower, and things like that.

Are you satisfied that at the moment the cooling tower design that you have, both in terms of its size, its flow rate, and the potential drift and plume that will be created by that, that you have maximized all the elements that you need to, including maximizing the reduction of the plume?

MS. ZAMBITO: With the wet cooling tower, Mr. Strehlow had indicated that the 7500 kilograms per second was our design, and yes, it is. And looking at the necessary heat transfer to return the water back to the condenser to get the necessary output on the unit that we were looking at, the ten cell cooling tower will do that.

So, yes, I feel adequate -- I feel that the cooling tower as currently designed, with the ten cells and the 7500 kilograms per second, will adequately address the heat rejection necessary for the -- for the plant.

HEARING OFFICER SHEAN: Is there any other feature, configuration or modification for a wet cooling tower that could be done, in your mind, that is only not being done because of expense or cost, that would minimize this plume?

MS. ZAMBITO: No, sir. I don't know of

anything else we could do with the wet cooling tower design and modify it in any way. The alternative would be the hybrid. And, as I indicated earlier, the hybrid would be a larger -- a larger piece of equipment, and -- and it would also provide additional backpressure on the facility, on the steam turbine, therefore reducing megawatts and the efficiency, the heat rate efficiency on the unit.

HEARING OFFICER SHEAN: Okay. Mr. Varanini.

MR. VARANINI: I don't have any further.

HEARING OFFICER SHEAN: Okay. Thank you, ma'am.

MR. VARANINI: And our last witness is Dr. Stephen Sheppard. And he needs to be sworn.

(Thereupon Stephen Sheppard was, by the Reporter, sworn to tell the truth, the whole truth, and nothing but the truth.)

TESTIMONY OF

STEPHEN SHEPPARD

called as a witness on behalf of the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. VARANINI:

Q Dr. Sheppard, would you tell the Committee where you're employed and what your position is?

A Yes. I am an Associate Professor at the University of British Columbia. I've been a consultant for 25 years. I'm a sub-consultant to URS.

Q And what's your -- what's your responsibility in this particular enterprise?

A I'm, I guess, the lead consultant and the visual expert on the visual assessment of the project.

Q And do you know the -- some of the experts that have appeared for the Staff?

A Yeah, very well.

Q And have you been a colleague of theirs?

A Bill and I have worked together for a number of years in the past, yes. And I have known Gary for a while, as well.

Q And did you prepare three pages, called the Testimony of Dr. Stephen Sheppard, that are before the Committee today?

A Yes.

Q And are they true and accurate to the best of your knowledge?

A Yes.

Q And were they prepared by you, or someone under your control?

A Yes.

MR. VARANINI: And with that, I'd move the three pages of testimony into -- into the record.

HEARING OFFICER SHEAN: Objection to the witness testifying as an expert?

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: Objection to the admission of his --

MR. VARANINI: What I would suggest is there are a couple of things we can do. Dr. Sheppard and I have -- he's been teaching me quite a lot about visual resources over the last several months, and I think what we'd like to do is -- is to have him give just his initial conclusions, and then if there is to be rebuttal, then I think he would enjoy really giving you the full flavor of his background and knowledge, in terms of placing the Staff's concerns and our concerns into a kind of calculus.

Otherwise, I would ask him to give a more thorough briefing in his opening remarks, if that were the case.

HEARING OFFICER SHEAN: Okay. But his testimony is admitted, is that right, without objection.

MS. DeCARLO: No objection.

HEARING OFFICER SHEAN: Okay.

MR. VARANINI: Would you like him to just give a short summary, and then have a -- more of a -- I can't say it --

HEARING OFFICER SHEAN: Colloquy? Sure.

MR. VARANINI: Sorry.

BY MR. VARANINI:

Q Why don't you go ahead.

A Okay. Essentially, I think our case is that the CEC Staff have proposed operating conditions on the plant that limit the size of the plumes at certain frequencies in order to reduce visual impact and avoid significance of visual impacts.

And I think our argument is that the definition of those thresholds, the window of time in which plumes of such a size that they might constitute a significant impact, is a little

restrictive when we take into account the variety of onsite conditions, particularly cloud cover, but also impacts of visibility and size in relation to local landmarks.

So we feel that the SACTI model, which has been the basis for all the quantitative predictions of plume size and plume frequency, of course, does take into account the presence or existence of fog, as defined meteorologically, but does not take into account cloud conditions. And the reason that we think clouds are important to consider is that it does impact the visual dominance and the noticeability and the appearance of the plumes, to some extent.

This probably wouldn't matter too much, except that the window of time which the Energy Commission Staff have defined as the level of significance is already quite small. They're talking about 55 hours per year for the daylight, no fog condition, which we've sort of agreed upon as being -- or we've talked about, anyway, as being a key threshold.

So because it's a very finite limit and quite a high constraint and a small window, we wanted to make sure that that window is

appropriate and reasonable, and we think when we take into account other considerations, that window should be somewhat larger than it is.

That's in a nutshell.

HEARING OFFICER SHEAN: Okay. Is that it, from the Applicant?

All right. Is the Staff ready?

MS. DeCARLO: We are. Our two witnesses will be Mr. William Kanemoto and Mr. William Walters, and they both need to be sworn.

(Thereupon William Kanemoto and William Walters were, by the Reporter, sworn to tell the truth, the whole truth, and nothing but the truth.)

TESTIMONY OF

WILLIAM KANEMOTO and WILLIAM WALTERS

called as witnesses on behalf of Commission Staff, having been first duly sworn, were examined and testified as follows:

DIRECT EXAMINATION

BY MS. DeCARLO:

Q Mr. Kanemoto, can you please state your name for the record.

A William Kanemoto.

Q Do you have before you your testimony in Visual Resources from the FSA, and the Staff Supplemental Testimony?

A Yes.

Q Was a copy of your qualifications filed with the Final Staff Assessment?

A Yes.

Q Do you have any modifications or corrections to the documents that you are sponsoring today?

A In Table 6.1 of Condition VIS-6, the supplemental testimony, the 10 percent high plume dimension should be changed from 200 meters, or 657 feet, to 210 meters.

PRESIDING MEMBER KEESE: A little closer to the mic, please.

MR. KANEMOTO: In Table 6.1 of Condition VIS-6 of the supplemental testimony, the 10 percent high plume dimension should be changed from 200 meters to 210 meters, a typographical error.

HEARING OFFICER SHEAN: That's on page 59.

BY MS. DeCARLO:

Q Does this correction alter your

conclusion?

A No.

Q Do the opinions contained in your testimony represent your best professional judgment?

A Yes.

Q In your analysis of Visual Resources, did you conclude there would be direct significant adverse impacts to the environment in the absence of Staff recommended mitigation measures?

A Yes.

Q Can you please summarize where you found the potential for significant impacts?

A Well, Staff modeling of visible cooling tower vapor plumes indicated that significant project specific and cumulative impacts could potentially occur to both nearby foreground and more distance middle ground view points under certain climatic and operating assumptions.

Staff determined also that the project structures, as seen from the San Joaquin Yacht Harbor, the San Joaquin River, and the Sportsmen's Yacht Club, when taken in combination with the existing views of Units 1 through 7, would contribute to significant adverse cumulative

visual impacts.

Finally, Staff identified a potential for significant project specific and cumulative night lighting impacts if the project lighting were not mitigated.

Q And was Staff able to recommend Conditions of Certification to mitigate for these impacts?

A Yes. To mitigate potential cooling tower plume impacts, Staff proposed Condition VIS-6, which requires the Applicant to restrict the size of visible cooling tower plumes of certain specified frequencies of occurrence, and to restrict the frequency with which ground hugging plumes would engulf neighboring sensitive land uses.

Compliance with this condition would reduce both project specific and potential cumulative plume impacts to less than significant levels.

Q Can you please summarize how you determined the threshold for visual impact significance of vapor plumes?

A The thresholds of visual impact for vapor plumes are essentially the same as those

used for all other aspects of the project, except that the criteria of time, that is, the frequency of occurrence of plumes of varying size, were introduced to account for the transience and variable character of plumes.

Briefly, the visual quality and viewer sensitivity of key representative view points are used to establish an acceptable level of project visual dominance. That is, the visual prominence, contrast or ability to demand attention in relation to its setting. Above that level of visual change a project may be considered to cause a significant impact.

Two key observer points, or KOPs, as we refer to them, located adjacent to the power plant, the San Joaquin Yacht Harbor and the Sportsmen's Yacht Club, were identified as most vulnerable to impact. At these KOPs, numbered four and nine, existing visual quality was considered low to moderate, and viewer sensitivity high.

Plumes were evaluated according to the size they were predicted to achieve for various percentages of the time. Specifically, this study established two key thresholds of impact

significance. Plumes expected to occur for 50 percent of daytime non-fog hours per season were considered a typical condition, and evaluated according to the same thresholds of significance as structures or other permanent features.

In addition, plumes expected to be visually dominant from view points with higher moderate visual quality or sensitivity for ten percent of daytime non-fog hours per season were considered significant.

The non-fog criterion eliminates plumes under foggy conditions, since these would not sufficiently -- would not be sufficiently visible to cause significant impacts.

The seasonal criterion reflects the fact that plume formation is highly concentrated by season, occurring most prevalently in winter. Thus, measuring plume impacts by annual periods has the effect of artificially diluting the actual perceived frequency of the plumes.

Events occurring ten percent of the time represent a reasonable worst case, as opposed to a worst case.

Q Is the methodology used by you in determining the significance of visual plumes used

by any other agency?

A Yes. The measure of impact significance is a function of visual dominance, levels of visual quality, and viewer sensitivity as used by the Bureau of Land Management and U.S. Forest Service, who developed this approach to visual assessment.

The thresholds relating to frequency of plumes were developed by Staff specifically for the purpose of evaluating power plant vapor plumes, according to the rationale described before and as used on other projects.

Q Is there an absolute quantitative threshold for determining the visual significance of a plume?

A No, there is no absolute quantitative threshold for determining the significance of a plume. Such a threshold can, however, generally be defined in specific circumstances on a case by case basis, using this methodology.

The visual significance of any visible impact, including those from plumes, is determined in this methodology by its level of visual dominance -- again, its prominence or ability to demand attention -- in relation to features of its

setting as seen from a particular key view point. Thus, the threshold for significance of a plume is not its absolute dimension per se, but its level of prominence to specific viewers, as a result. In that sense, broad dimensional thresholds of significance can generally be defined.

This is how impacts are defined in Table 6.1 of Condition VIS-6, in relation to key view points, KOPs 4 and 9, which are the locations likely to be impacted the most.

Q Why was this particular quantitative approach used in defining impact significance?

A In this case, this approach was taken only because the Applicant objected to the setting of performance thresholds based upon their own predicted plume modeling results, which Staff had initially found acceptable and less than significant. More typically, Staff would simply evaluate predicted plumes of a specified project and determine their visual dominance to specific sensitive viewers in order to identify their impact significance.

Project characteristics which would determine plumes of the proposed project are not yet known, thus, the need for performance

thresholds.

Q Now, Applicant has testified that cloudy days should not be included in a plume impact analysis. Is -- in your professional opinion, do plumes have the potential to create a significant visual impact during cloudy days?

A Yes. Both meteorological data for the project area and field observation showed that often, during winter, vapor plumes occur during conditions of high clouds, but high visibility. The background of the high cloud does reduce visual contrast of plumes. However, this by no means reduces the contrast of plumes to insignificant levels. The brightness, color, motion, and distinct form of plumes all create a level of contrast sufficient to be perceived as an impact.

This condition was considered in arriving at the levels of visual dominance of project plumes. This is illustrated by some photographs that were taken in the project vicinity in cloudy winter conditions, which we could show right now.

These are various pictures taken sort of at random, during winter mornings this year. This

is the GWF plant. Another instance.

So these are all examples of plumes of various degrees of prominence seen against a background of clouds, cloud deck. I believe it's clear that under many circumstances, they're quite visible.

We were also concerned, this is particularly the case when considering relatively large plumes seen from varying air foreground view points, as in this particular case. The background of clouds would not reduce the contrast of large plumes seen by project neighbors to insignificant levels. Indeed, under moderately severe events predicted in some Staff plume modeling, viewers at KOPs 4 and 9 would have a difficult time seeing any sky behind the dominant foreground plumes.

DIRECT EXAMINATION

BY MS. DeCARLO:

Q Mr. Walters, can you please state your name for the record?

A Yes, William Walters.

Q Do you have before you your testimony entitled Cooling Tower and HRSG Exhaust Visible Plume Analysis in the supplemental testimony?

A Yes, I do.

Q Was a copy of your qualifications distributed today?

A Yes, it was.

Q Do you have any corrections to the document you are sponsoring today?

A Yes, I have one typographical to fix. On page 73, fifth line down, the flow rate indicated at the beginning of the line should be 5200, as opposed to 52,000.

Q Does this correction alter the conclusions reached in your testimony?

A No, it does not.

Q Do the opinions contained in your testimony represent your best professional judgment?

A Yes, they do.

Q Can you please explain how you conducted your analysis for this project?

A Yes. We obtained the analyses performed by the Applicant, both for the HRSG and for the cooling tower, and I essentially re-ran all of these analyses, using the same programs used by the -- by the Applicant.

For the HRSG analysis, I checked the

parameters going into the model, basically the design parameters for the exhaust, confirmed they were in, fact, conservative. And upon review of that -- their modeling and the results of my modeling, and with the conservative assumptions used, we determined that the frequency for plumes occurring from the HRSG would be less than ten percent during any particular season. And Mr. Kanemoto determined that that would be a less than significant impact.

For cooling towers, we used the SACTI model to assess impacts. The -- when initially running it, I noticed that the cooling tower design was very significantly different from another case that I had just run, that had the exact same heat release ratio, the Mountainview case, so I brought the question of whether or not the inlet air flow rate that they had used in that modeling analysis was correct.

They indicated that the actual inlet air flow rate could range between that number and 7500. I then ran a 7500 case, and to be complete I ran a 5200 case, just for a bounding analysis, because at this time I don't have a complete design for the cooling tower to be able to verify

the specific inlet air flow rate.

The results were modeled for all hours, daylight hours, daylight no fog hours, and --

MR. BOYD: Yeah, I can hear --

PRESIDING MEMBER KEESE: Please -- please, Mike, we're hearing it also. Thanks.

MR. WALTERS: To continue. We modeled for all hours, daylight hours, no fog hours, and daylight no fog hours, and presented the results for each. Upon review of the facility, Mr. Kanemoto determined that daylight no fog hours, which are the least conservative subset of that -- of each of those data ranges, was appropriate for use in determining what would be significant in terms of plumes.

In addition to running the one year of Pittsburg met data that the Applicant provided, I obtained another met data set from Bay Area Air Quality Management District for Bethel Island, which is located approximately eight to ten miles east of the plant site. That data did not have fog hours, and I was only able to run all hours and daylight hours, for a comparison with the Pittsburg data, since one year of met data may or may not be representative of the conditions you

may see in any particular worst case season.

MR. BOYD: Could you have that person talk up louder, please?

PRESIDING MEMBER KEESE: We'll try. Just a little closer. Really, when you get up there, we can hear it. So I guess maybe they can, too.

MR. WALTERS: In analyzing the Bethel Island data, it appears that the winter time all hours and daylight hours modeling results show larger plumes and a higher frequency than the Pittsburg data, so there is some question whether the Pittsburg data would be representative of the plumes.

In analyzing the plumes, we were quite aware that the SACTI model, much like any other dispersion model, in essence, it does provide conservative results. And we do evaluate that and consider that in -- in our analysis. The SACTI model, as Mr. Strehlow indicated, has normally about a factor of two, in terms of its accuracy. That's very consistent with most air dispersion models, such as ISC, for short term, one hour standard modeling.

So it's not in any way particularly more

inaccurate than other models that we use to make our Staff determinations.

BY MS. DeCARLO:

Q Can you discuss the effectiveness of using SACTI to predict plume sizes?

A As I -- as I indicated there, the model, which was funded by EPRI and designed by Argone National Lab with some of their consultants, was field verified, and it did determine that it was the best available model that they could find, in comparison with several other models that are available in the European community. And it does provide the best results that we can use.

And we do, in fact, identify those results which we know are probably not realistic. But then realizing that even if a 10,000 kilometer plume isn't realistic, that particular hour is still going to have a very long plume, whether it's 10,000 or 2,000, in relation to the significance criteria that's well above the -- above those levels.

Q Now, you stated that Applicant's mass flow rate is markedly different from other projects you've analyzed. Why is this a concern?

A This is a concern because the model

results are very dependent on the air flow rate that's assumed. Essentially, what you can -- you can do is you can take a look. I have a psychometric chart which shows the different -- a few different points at which you may start your dispersion from the cooling tower. For simplicity, I've just separated them to be able to be seen, but you can see that if you were to start at Point A, it would -- you'd have a much shorter line to get to the reference condition which is shown in the lower left-hand point, which in this case is approximately 40 degrees Fahrenheit, 80 percent relative humidity, which is not an uncommon winter time condition for the Contra Costa area during daylight.

And essentially, as you slide up the scale there from Points A through C, that's essentially decreasing the air -- the air flow rate. So if the air flow rate were to decrease, you can see that you cross the saturation line a lot deeper and -- and the line to get you back to the saturation line is a lot longer. And while you can't provide specific correlation with that, in terms of the actual length, the -- it qualitatively is true that you would see a longer

length of plumes, larger plumes from the C condition than you would from an A, for the same met condition.

Q Now, has the Applicant guaranteed that their air mass flow rate would be 7500?

A I haven't received anything to indicate that they have a final design that specifies 7500 will be used, particularly under conditions which are favorable to plume formation, which would be the winter time cool high relative humidity conditions.

Also -- also provided here is another indication of how the air flow rate changes the plume prediction. Again, realizing that the absolute values here may not be exact, in terms of what you would observe, the relationship in terms of the -- of the increase in air flow rate decreasing the plume length are accurate.

Q Now, if the Applicant was unable to meet the 7500 mass flow rate, would the resulting plumes from a conventional tower below the 7500 mass flow rate exceed Staff's determined threshold of significance?

A Based on our SACTI modeling results, the 7500 condition actually exceeds the VIS-6

condition significance, and anything -- any flow rates below that would just serve to increase the plume lengths that are likely to occur at the facility.

Q Is it feasible to design cooling systems that would result in no significant plumes?

A Yes. As -- as indicated in Ms. Zambito's testimony, and in my testimony, there are methods to essentially eliminate plume, or to mitigate or abate the lengths of plumes. Some of these would be a hybrid tower, as she indicated, or air cooling. Also, there are wet/dry towers which are slightly different than hybrid towers, that is in some aspects just semantics, that you basically heat the release point so that you're not on the saturation curve.

There is a capital penalty for designing that sort of system, but there are a number of different types of systems, and the difference in capital cost and the hits in efficiency and operating cost vary for all of them. And the -- they can be designed to minimize one or more of those considerations.

Q In your professional opinion, would it be --

PRESIDING MEMBER KEESE: Excuse me.

MS. DeCARLO: Oh, I'm sorry.

PRESIDING MEMBER KEESE: Let me follow up on that. You acknowledge that there are capital cost differences. Do you -- and I heard there were deficiency, also. Are you -- do you also agree that there would be more emissions?

MR. WALTERS: If there are any efficiency hits for a similar amount of megawatts leaving the plant, there would be a very small amount of increase in emissions. The efficiency hits we're talking about are --

PRESIDING MEMBER KEESE: Probably the same degree as the efficiency change.

MR. WALTERS: Yes. Fractions of a percent. And I guess, to be more illustrative, I'll --

PRESIDING MEMBER KEESE: So you're suggesting that these other technologies would involve fractions of a percent of efficiency on the plant.

MR. WALTERS: Actually, the one identified by Ms. Zambito is, I believe, about a .4 percent change in efficiency. And you could actually lower that with other designs, which may

increase capital cost penalty.

In particular, the one design that I evaluated, which was different than -- I would assume different than the one Ms. Zambito evaluated, was a design called the clear flow system -- in consultation with that particular vendor, who I won't name unless you ask me to, because I don't know if I should -- indicated that in order to get a -- a tower that would have essentially no plume for a Bay Area source, with a similar footprint, what you would have is about a 50 percent capital cost hit, which she estimated to be about a million, assuming that the cooling tower, and just the cooling tower itself, would be about a $2 million investment.

And again, like I said, it was about a 50 percent hit. He indicated on -- on their particular system there aren't -- really are no specific noise impacts, as associated with -- with that provided in the Applicant's testimony. And with their system, the efficiency hits only occur when they actually have to turn on that part of the system during the summer.

Essentially with their system, it's a wet cooling tower with a dry module above. If you

size the wet portion of that to meet -- to meet the summer time needs, you wouldn't turn the dry part on, and it wouldn't be any real significant efficiency hits. Efficiency hits occur in relation to when it is used during winter time.

BY MS. DeCARLO:

Q In your opinion, would it be more expensive to mitigate for plume impacts before or after the cooling tower is built?

A Well, if there is the potential to have a significant plume, obviously it would be a lot less risk to actually put in the plume abatement system now, as opposed to having to retrofit a system that is already designed. So I guess, in my view, if -- we may disagree whether we have significant impact, but if the -- if the Commission determines that there is a -- or may be a significant impact, they should identify the fact that the cost is cheaper now to put in a plume abating system than it would be later.

Q Have you identified any significant problems with the Applicant's testimony?

A I identified the fact that the noise impacts that were provided in Ms. Zambito's testimony did not have the correct distances from

the receptor points. These were old numbers that were provided in the original AFC, and were replaced quite a while ago.

For example, to oil mill three, the distance, the actual distance is closer to 3500 feet from the new location for the cooling tower, as opposed to the -- which would result in a significantly lower impact. And the distance to oil mill five is also a much -- much larger now with the new location. It would be more like 700, 800 feet. The importance of that being that the -- you get a -- a six decibel reduction for every doubling of distance from -- from a source.

So the actual noise impacts -- from this hybrid system, and again -- or from -- or from the dry cooling system, or the air cooling system, I should say, the impacts would be much lower. And you could obviously design a system that would even be lower than that, or pick a design that would have a lower noise impact than -- than the particular hybrid evaluated.

Q Do you have any opinion as to how long it would take, or it could take to redesign a cooling tower from the conventional one proposed by Applicant to a hybrid system?

A The amount of time for design? I think basically, if you have a good tower vendor, you just tell them what they need to design to and they'll -- and they'll design to it.

Since there are existing, pretty much off the shelf units that you could use, like the Clear Flow system, I don't think that there would be a huge increase in the amount of time required to do the engineering design.

DIRECT EXAMINATION (Resumed)

BY MS. DeCARLO:

Q Mr. Kanemoto, can you please summarize Staff's recommended Condition of Certification VIS-6.

A Condition VIS-6 requires the Applicant to restrict the size of visible cooling tower plumes to certain frequencies; to restrict the frequency with which ground hugging plumes would engulf neighboring sensitive land uses. Compliance with this condition would reduce project and cumulative plume impacts to less than significant levels.

These plume size and frequency values are provided in Table 6.1 of Condition VIS-6, and are based on potential impacts to viewers at the

San Joaquin Yacht Club, and the San Joaquin -- the Sportsmen's Yacht Club, I'm sorry, and the San Joaquin Yacht Harbor. A limit to the size of the plumes occurring 50 percent of the time and 10 percent of the time was given.

It's important to note that the ten percent thresholds provided in Table 6.1 were considered to be liberal by Staff; that is, plumes of these dimensions would clearly be seen as dominant and significant by viewers at KOPs 9 and 4, with some substantial margin of error.

We had a -- an image of the plume envelopes that were being proposed at KOP 9. It's a little difficult to see, because the image is panoramic. We've also got a hard copy floating around here. I apologize in advance for the quality of the images. They were produced late last night, under less than ideal circumstances. But I think they are fairly accurate, in terms of the -- the envelopes that we're describing.

The ten percent envelope plume exceeds, you know, goes off the top of the photograph. It would be roughly equivalent to the height of the Units 6 and 7 stack, which is quite a bit higher than the limit of the photograph.

The other point I'd like to make with regard to this picture is the fact that it's a very -- extremely wide panorama, and as a result the -- the apparent visual scale of the objects in view are diminished considerably. They look much smaller than they do when you're there in person. But we -- we did that to include all the elements that are being used for comparison purposes.

To ensure the level of plume performance, the Applicant would be required to provide a description of cooling tower design and operation that would allow compliance with the plume size and frequency specified in the condition. The Applicant would be required to provide sufficient cooling tower design data for Staff to confirm compliance through independent plume modeling.

The Applicant would also be required to provide a plume impact complaint resolution form, and a record of plume complaints and the resolution.

DIRECT EXAMINATION (Resumed)

BY MS. DeCARLO:

Q Mr. Walters, how could compliance with this condition be monitored?

A Well, either a design that doesn't require monitoring is -- it is de facto a completely plume abated system, would allow us to take out the monitoring provisions. Or you could monitor, since it is a daylight no fog condition, you could monitor with cameras and put those visuals into -- into the control room, much like you would, say, a boiler flame, which -- which are monitored in conventional power plants.

And put in -- put in reference points on the screen, or put in a background program that reads the data and can alarm if -- if the plume, if it sees a plume beyond particular points.

Q Mr. Kanemoto, what problems does Staff find with Applicant's proposed plume significance thresholds of 20 percent per season or five percent annually?

A Well, the Applicant's proposed thresholds in effect imply that the unmitigated project, as proposed and modeled so far, should be considered acceptable. Our objections are twofold.

First, depending upon the mass -- assumed mass flow rate of the project, they would not allow the project to meet the thresholds of

significance for impacts of the foreground view points, KOPs 4 and 9, described in Table 6.

The second and larger objection we have is that an unmitigated project like the one modeled, capable of producing acceptable plumes under either a five percent annual standard or a 20 percent seasonal standard, has been modeled, and was predicted to produce two-mile long plumes for ten percent of non-fog winter hours, as depicted in a chart which we have here, and I think it's been circulated.

We regard this size and frequency of plumes as being excessive.

Well, perhaps I can come back to -- or respond to questions with regard to the chart in a moment. But plumes of a comparable order of magnitude have been observed in the general area, particularly in Pittsburg, and were observed in the field to be clearly significant in impact. And we thought we'd -- it would be worthwhile to give a few examples of those plumes, since they give a sense of what we're talking about.

The next slide.

This is the GWF plant. It's a little hard to read the dimensions, and the dimensions

are approximate, but that's roughly -- we're assuming it's roughly --

PRESIDING MEMBER KEESE: Where is this?

MR. KANEMOTO: This is the GWF plant across from Wilbur Road. And we're estimating the height of that plume there to be about 500 feet.

The GWF plant is considerably smaller than the one that's being proposed for this project.

This is an example of the --

PRESIDING MEMBER KEESE: Did we license these plants?

MR. WALTERS: I believe the GWF plant is -- is small enough -- actually small enough to be non-jurisdictional.

PRESIDING MEMBER KEESE: Okay.

MR. WALTERS: One of the old cogen 49 megawatt units.

MR. KANEMOTO: This is a photograph of the -- the Pittsburg plant, taken at considerably greater distance. And -- I can't see the distances myself. I believe the length is approximately 2600 feet. It says inches, but that's a -- obviously a typographical error. The height was estimated to be roughly 975 feet.

Here's another plant -- picture of the same plant. The plume in this picture is estimated to be roughly 2100 feet long.

Another picture of a similar plume. They haven't been measured. And this is a picture of the Etiwanda plant. It's in another location, but it just gives an idea of the type of plumes that could be expected.

The reason we produced this chart is to indicate the -- some of the -- try to clarify some of the implications of altering the standards to the five percent annual standard, or the 20 percent annual seasonal standard. The -- if you look at the 20 percent frequency line, which is a vertical line on the left side of the chart, it shows the proposed 20 percent standard for a 7500 kilogram per second scenario, the -- the black square cross by the 7500 kilogram per second curve, the problem that we have with that standard is not that value at that point.

The problem with that standard that we have is the fact that it implies the rest of the curve. In other words, it implies the fact that at the ten percent threshold, we are looking at this 3600 meter long plume, and by reducing the

value of the ten percent threshold, we're proposing to lower the entire curve so that at the ten percent point the -- the impacts are at a more acceptable level.

Is it clear what the -- how the line, the curves on this chart represent. They simply refer to the same project in its unmitigated state, under three different operational scenarios, 10,500, 7,500, and 5,200. The 5,200 kilogram per second curve obviously shows that we exceed all the criteria that have been being discussed by quite a margin.

PRESIDING MEMBER KEESE: And you said earlier that you had not had an indication of which one you thought was the most appropriate, but you're guessing that the 7500 is?

MR. WALTERS: Well, the 5200 was run as a bounding case. Realizing that the --

PRESIDING MEMBER KEESE: But I -- seems to me I heard that the Applicant had not indicated to you which one they thought it was, but you felt 7500 was the most appropriate? Is that --

MR. WALTERS: I believe it's somewhere in between 5200 and 7500, probably. It could be 7500.

PRESIDING MEMBER KEESE: Okay. I'm sure we'll hear from the Applicant.

MS. DeCARLO: And with the 7500 scenario still exceed our -- the Staff's threshold of significance for the ten percent? Would the 7500 mass flow rate still exceed Staff's threshold of significance for plume impacts?

MR. KANEMOTO: Yes, it would. It would be quite close, but it would -- it would exceed the foreground thresholds for significance slightly.

MS. DeCARLO: Okay. The Staff is available for the Committee.

PRESIDING MEMBER KEESE: Okay. I think we'll hear a brief rebuttal, and then ask questions of everybody.

MR. VARANINI: I'd like Dr. Sheppard to go first.

PRESIDING MEMBER KEESE: Just a few minutes.

HEARING OFFICER SHEAN: Yeah. Let me ask one of the Staff witnesses, in terms of the daylight no fog circumstance, the Applicant has indicated that they believe that would occur something on the order of 54 hours per year. Am I

correct, Mr. Varanini? Do you have a number in terms of hours that you think that would occur, or are you doing it only in terms of percentages, or can you translate it?

MR. KANEMOTO: Well, my rough understanding was the 55 hours referred to ten percent of the daylight no fog winter hours. Is that correct?

MR. WALTERS: That's correct.

HEARING OFFICER SHEAN: Well, how many hours per year, then, do you think the meteorological conditions would exist that create the worst case visual plume scenario, in your view?

MR. KANEMOTO: I don't have that number right now. I'm sorry, could you repeat the question, please?

HEARING OFFICER SHEAN: Well, I'm just trying to get you to translate this --

MR. KANEMOTO: Into absolute hours.

HEARING OFFICER SHEAN: Okay. And the question is, how many hours per year do you believe represent the meteorological conditions that create the worst case visual plume?

MR. WALTERS: I think it's easier to

reference that to the -- to the condition requirement of 210 meters, and it would appear that for the winter time, you would probably have conditions that would exceed 210 meters at least 20 to 25 percent of the time. Of daylight no fog hours.

COMMISSIONER MOORE: Right. That's -- that's full 25 percent of each -- 25 full percent of all the winter days, a quarter of the year, for the full day?

MR. WALTERS: Daylight no fog hours. There was -- there was a finding of 555 hours of daylight no fog in the one year met data, where we had fog data, the Pittsburg data. That would correspond to maybe 110 to 135 of those hours.

HEARING OFFICER SHEAN: So basically about twice what they've calculated. Is that -- is that what you're indicating?

COMMISSIONER MOORE: If they're at 54, and you're at 110.

MR. WALTERS: No. We're talking -- we're talking at cross purposes here. The 55 is just the amount of hours, the ten percent. That is the number of hours that represent ten percent

of the time when you have daylight no fog. That's all that 55 represents.

It doesn't identify when or -- there is or isn't plume. It's just that's the background. That's the -- that's the frequency relationship, as opposed to the plume relationship.

What you're asking me is what the modeling results show as the plume relationship, and I'm saying it's 7500. You know, it -- it looks like that you would have plumes over 210 meters somewhere around 25 percent of the time.

MR. O'BRIEN: I'm sorry. Somewhere around --

MR. WALTERS: Twenty-five percent of the daytime no fog hours, for winter. So 25 percent of those 555 hours, or 25 percent of the time where you have a reasonably clear condition during winter, you would have plumes exceeding this value.

MR. KANEMOTO: About 137 hours.

HEARING OFFICER SHEAN: And just so I understand, as -- when we're talking daylight no fog, the no fog is derived from the fact that you're taking temperature and humidity calculations to find fog, but you could have a no

fog but a cloudy situation? Would -- is that correct?

MR. WALTERS: Yes. You could have -- you could have a cloudy situation. And -- and there could be other visibility reducing situations. We would've modeled those if we had had the data for them.

COMMISSIONER MOORE: Let me go back, before we go back to have cross examination by the Applicant, or other questions, and potential rebuttal. Let me go back to something you were saying about stack design, and help me understand.

Is it your opinion that a change in the stack shape could create a venturi effect, for instance, that would cause the plume to go up higher and get dispersed without having to go to an alternate like a hybrid design, or dry cooling?

MR. WALTERS: I haven't analyzed that.

COMMISSIONER MOORE: Any of your other witnesses, counselor, that -- that have an opinion on that?

MS. DeCARLO: No, I'm sorry.

HEARING OFFICER SHEAN: It appears, both from your testimony as well as these photographs, that the Bay Area or the -- the Suisun Bay Area,

creates an area that's more susceptible to this kind of meteorological condition that creates the visible plumes, because most of your photographs are from there. Is that correct?

MR. KANEMOTO: Yes, I think that's true.

HEARING OFFICER SHEAN: That's right. And that -- and that's because it's a marine environment?

MR. WALTERS: Basically, I think in general, California just has cool wet winters, and that's -- the lower the temperature, the higher the relative humidity, the more likely you'll get a plume.

HEARING OFFICER SHEAN: Okay. So under the meteorological conditions, it would create what in your view is the worst case plume for this power plant. We would have GWF, Pittsburg, and I guess the next question is, how about the two power plant projects that we approved and are under construction now. Are they going to be producing what in your mind is the worst case plume?

MR. WALTERS: I think you'll need to reference which -- which ones --

COMMISSIONER MOORE: When they combine.

In other words, if you have three plants already in existence, plus two that we permitted, and they're all within a geographic range of, I don't know, six clicks, let's say. Are you -- are you going to create an additive condition that will result in, absent this project, your worst case scenario. Is it just about to happen anyway?

MR. WALTERS: I -- I think it's different, because you're looking at it from -- from different perspectives and different locations. And what Bill is -- is doing is identifying it based on the specific viewing locations that are important for this particular project.

COMMISSIONER MOORE: Okay. I'm asking my question badly, then. Let me try again.

MR. WALTERS: One of the -- if I understand you correctly, I think one of the -- one of the concerns with the larger plume scenarios that have been depicted in the 7500 kilogram scenario is that, you know, certain key view points and identified local policies as being as visual concern, such as the Antioch Bridge, and so on, could be directly impacted.

COMMISSIONER MOORE: Well, not yet. No.

If -- if I go back and ask my question, let me try one more time.

Right now, we've got three existing plants, and Mr. Shean just identified three of them, Pittsburg, GWF, and what's the third one that you pointed out? Well, three existing plants. And my question would be if you imagine that each one of them is generating steam at roughly the same rate that you might expect from a plant like this, add two that we've already permitted, but which are not constructed yet. Before this plant ever comes online, are we already set up to have a cumulative impact such that there will be a worst case scenario occurring already? Are we already set up for that?

MR. KANEMOTO: Well, I think that the statement that we made in the supplemental testimony I would still stand by, which is that -- I would probably still stand by my -- the statement that was made in the supplemental testimony, which is that under the -- some of the worst scenarios that were outlined in the -- some of the modeling that's been done so far, you would -- we would find it difficult or impossible to argue that the additional contribution of this

project to that scenario would -- would constitute a de minimus addition to cumulative impacts, particularly because they have the potential to directly impact certain key observation points that we've identified, namely this -- the Antioch Bridge, some of the other yacht harbors, and the --

COMMISSIONER MOORE: So -- so in that way, you're qualifying their impact or saying that it's more significant than the existing plants because of their geographic location.

MR. KANEMOTO: Well, we would discount them if -- if we could say that the additional contribution of the project was de minimus. That is to say that the -- the overall condition of the view shed was essentially the same. And in -- in fact, that was the argument that we did make, that was the conclusion that we did make in the PSA. It's just that at this -- at this much, much greater level of some -- we don't how we could make that statement.

COMMISSIONER MOORE: Okay. Mr. Shean. Terry, anything?

MR. O'BRIEN: Yeah. I just have a point of clarification. So the Staff view is 137 hours

in winter, when you would have significant plumes. Is -- is that a correct characterization? And -- and that 137 hours is basically daylight hours, when the plume can be seen. And if you take an average of ten hours a day in winter, when you have daylight, December, January and February, you get about what, 900 hours. So 137 hours out of that 900 hours in winter, that constitutes a significant visual impact.

MR. KANEMOTO: Well, this is 137 daytime non fog hours, which I -- I can't remember the precise number, but I think that's 60 percent of the total daytime hours, or something like that.

We -- we are not counting plumes that occur in foggy, or however the model meteorological data defines foggy hours. That would increase the number of plume days radically.

MR. WALTERS: And I guess, to be more clear in terms of what we are considering significant, the significance criteria which is in VIS-6 is actually a 10 percent frequency above 210 meters. And that -- for daytime no fog hours, and that significance is -- would be 55 hours.

What we're saying is that the modeling on 7500, as -- as we are getting it out of SACTI

right now, is indicating that they would have about 137 hours that they would have which is what we're saying, that the -- the design right now probably would not meet the significance criteria that we have for the ten percent wintertime condition.

COMMISSIONER MOORE: I'm, you know, I'm sorry, I didn't understand that at all. Can you go back over the last two sentences and see if you can make that a little clearer?

MR. WALTERS: Okay. The first -- the first point -- the first point is what we are considering significant. And that significance point, which is provided in VIS-6 and provided in the table in the -- in the supplemental testimony, is -- it is considered significant if more than ten percent of the daytime winter no fog hours, the clear hours during winter, if more than ten percent of that time there's a plume that is -- that had a greater dimension than 210 meters in length.

Now, there's also a corresponding dimension in height, and what that essentially is illustrating is a dominant feature in -- in the view shed of KOPs 4 and 9, as -- as Bill

indicated, and it is that frequency which we are determining as the significance, or the -- the amount that we consider allowable to keep it -- to keep the impacts to an insignificant level.

What we are finding in the modeling from the 7500 case --

COMMISSIONER MOORE: Keep the impacts to an insignificant level.

MR. WALTERS: Right. That -- that's the significance threshold, essentially, is that ten percent of the daytime no fog hours. And again, there were a total of 555 wintertime daytime no fog hours. So ten percent of that is 55. And so if there were more than 55 hours with -- above those plume dimensions that are -- that are provided, 210 length, the -- was it 200 -- width. Well, and the other dimensions provided, what we're finding in the modeling is that -- that we're seeing, rather than ten percent of the time, that's likely to occur more like 25 percent of time that's likely to occur.

COMMISSIONER MOORE: Okay. Thanks.

HEARING OFFICER SHEAN: Mr. Varanini.

MR. VARANINI: Dr. Sheppard and our other witness will have some comments, too.

I want him to go first, but I want you here.

COMMISSIONER MOORE: Then let me ask each one of you to speak very clearly into the microphone, because listeners on the telephone line are having a little bit of trouble hearing you.

So, Dr. Sheppard, you're going to have to get right up next to the microphone.

DR. SHEPPARD: Okay. I think, in a -- in a nutshell, the -- I think we're talking about differences in degree as to where the threshold should be most reasonably located.

As you just heard, I think you can -- you can simplify the Staff threshold, as -- as you heard, at sort of greater than ten percent frequency of winter days no fog, when the plumes are greater than 210 meters long.

We would argue that a threshold that has a higher frequency, more like 20 percent, would be more reasonable when you take into account cloud conditions and other visibility factors. And also that the actual size of the plume that we would consider to be reasonable worst case significant would probably be something closer to 500 meters

and 200 -- or 210 meters. This is in length, now.

And the reasons for that are really -- there are perhaps two or three main reasons for us thinking that. We -- we agree that the -- you know, there are no definitive quantitative standards that have been established, unfortunately. The -- and so it's appropriate to look at the site specific conditions, and that includes not only meteorology but also the types of views, the viewing distances, what views are being blocked by plumes, how visible the plumes are relative to background, clouds, et cetera.

So when we looked at the ten percent winter day no fog frequency, we had originally pursued a five percent annual hours frequency, which is about 181 hours rather than 55 hours. But we think that some of the photographs that you've seen make the point quite well.

If you look at the photograph that's on at the moment, you see what we consider to be a worst case condition. Blue sky, no cloud, and this is, in effect, what we'd consider to be, you know, worst case. The plume is completely visible, and so you -- you see the full extent of the size.

When there's cloud conditions, whether that's full cloud or partial cloud, what happens is that much of the more distant parts of the plume become indistinguishable from the cloud cover. Now that it's not visible, you still can see it, but the visual contrast is much less. The -- just the noticeability of the plume is much less. So the visual dominance does go down. It's still visible, can still be dominant, but the conditions are much less the high impact, as opposed to this condition.

So what we did was we looked at the cloud data, and determined from the Bethel Island data that you get a full cloud cover, defined as 80 percent or more of cloud coverage, approximately 54 percent of the time in those same winter months, during the day. And if you look at partial cloud cover, which is defined as 40 percent or more of cloud cover, that occurs something like 75 to 78 percent of the time during the winter.

So that most of the time in those -- in that winter period, which is the worst case period for plume size, there is a substantial amount of cloud in the sky, and we feel that that does

reduce the -- the visual dominance of plumes, and that the most restrictive and the most worst case condition to be considering would be something like what's on the screen, when it's a clear blue sky.

Or, to take another example, we could show you, for example, in some of the simulations that were prepared earlier, I think this Figure 71-2, which is a visual simulation of the proposed project with plumes seen from KOP 7, which is the Antioch Bridge, which is, in our view, one of the worst case KOPs. And you can see that there's clear blue sky, there's quite a bit of visual contrast from the plume. And in this sort of situation, you can see that there might be potential for view blockage of the hills, that the -- that the plume will attract more attention to the plant than it would otherwise receive.

But if this was in the cloudy condition, I think this would be much less noticeable. There would already be view blockage of the hills. There would be much less, lower levels of visibility and contrast, and we feel that it would be much less of an impact.

So we feel that the -- that's really the

basis for saying that with ten percent, the 55 hours really amount to about 28, 30 hours of -- at the -- most conservatively, it's probably even a lot less than that, when there would be clear blue sky and full visibility, and the real noticeability of the plumes. And we think that that 30 or so hours is probably too restrictive a standard for visual impact significance. It's a very small percentage. It's about .3 percent of the total hours of the -- of the -- we think that's too -- too few days of traveling to work, or getting up and seeing a plume of that level of significance.

That's our argument for why we think a 20 percent seasonal days no fog frequency is a more reasonable standard to meet.

On the plume dimension side, we feel that the 200 meter length is also a pretty small plume length for typical plume conditions. And I do understand that that's also I think the distance away from the closest receptors, which are the two caretakers' residences at the San Joaquin Yacht Club. But if you look at the visibility of plumes from the full range of KOPs, the bridge, you know, more distant view points

where you're seeing the backdrop, you're seeing Mt. Diablo, you're seeing the river, et cetera, a 200 meter length plume is really not a very large plume.

Again, to bring you back to Figure 71-2, which is a view from the bridge, the plume that's shown here, as is recognized by the CEC Staff, is actually a little larger than we had modeled at the time. We were overly conservative with it. And this is -- approximates something in the range of 160 to 200 meters equivalent length of plume in that view. So this is the threshold, then, that I think is being used to say this is now a visually significant plume, although based on the analysis of these simulations at the time, I think we all agreed that that was not considered visually significant.

I guess what we're saying is 200 meters it not a very long plume to have as a standard of significance. It doesn't obstruct much of the view of the -- the surrounding hillsides. It is within the range of the actual scale of the existing facilities. We think that a plume that was approaching perhaps 500 meters in length, which is coming a lot closer to the highway, could

block much more of the view, would attract a lot more attention, would be a more reasonable standard.

COMMISSIONER MOORE: And your more reasonable number is?

DR. SHEPPARD: Approximately 500 meters in length, under those worst case conditions.

PARTY ON TELEPHONE: May I have a comment, please?

COMMISSIONER MOORE: Actually, not yet. You're not -- you're not in a position to comment yet. We're -- we're still dealing with the parties.

PARTY ON TELEPHONE: Here's the problem I'm having. I was at the first workshop on this thing --

COMMISSIONER MOORE: Hang on. Hang on. You're going to get a chance to ask questions. But you're not -- you don't have the floor yet.

Go ahead and ask your question. You had a question. I'm sorry.

MR. KANEMOTO: Well, I was -- you were describing the typical -- the threshold for the typical plume length; right?

COMMISSIONER MOORE: You have to get

right onto that microphone.

MR. KANEMOTO: You were describing the typical plume length just now, the 500 meter was for typical --

DR. SHEPPARD: No. No, for the worst case significance threshold. We actually think it would be simplest to --to refer primarily to the true worst case. And -- and the 50 percent frequency is really more of a typical situation, and what we've been trying to identify is to -- how to assess significant thresholds based on a reasonable worst case, which is -- goes back to the discussions way back with Gary several months ago.

So --

COMMISSIONER MOORE: That's Gary Walker.

DR. SHEPPARD: Yes, Gary Walker. Sorry.

So I think there's one other point we'd like to make, and that is part of the problem with this is -- is that the SACTI modeling, as Mark has suggested, seems to us to be somewhat unreliable at the -- the higher extremes. In other words, when you get down to the small frequencies, the extremes of the -- of the model, when you're talking about obviously the largest or the

smallest plumes, you get some quite strange effects, and Mark pointed out a couple of them.

And just to clarify -- I don't know if I dare do this, but I'm going to try. To clarify the graph that Bill produced here, which was quite helpful, actually, if we look at the numbers on here, you actually find that as opposed to being a nice gentle curve that runs through the 7,500 kilogram per second curve, if you follow that curve --

COMMISSIONER MOORE: It gets --

DR. SHEPPARD: -- it actually has a -- well, it actually has a very strong what we call a knee, or a bend in it. If you look at the actual data, and I have a copy of that here if you'd like it, Mark is the man that ran these models. Once you get to the 11 percent frequency, the 11 percent frequency, as opposed to the 10 percent frequency, goes from about 500 meter plume length to 3,600 meter plume length, in a one percent increase.

So rather than going at sort of a gentle curve, it actually goes like this, and then there's almost straight up --

COMMISSIONER MOORE: So your contention

is that there's an anomaly built into the model itself.

DR. SHEPPARD: We feel that there's -- that we're not sure we can trust these -- because of the way it categorizes the plume conditions, it sticks an awful lot of things into one single condition. So you get what's quite a leap.

COMMISSIONER MOORE; So how --

DR. SHEPPARD: So what happens, it turns out to be right around 10 or 11 percent.

COMMISSIONER MOORE: So some -- if you went back in the model and you looked at that point between 10 and 11 percent threshold, you'd find out that there's something that adds a new category, or --

DR. SHEPPARD: Yes. It --

COMMISSIONER MOORE: -- it changes the long factor of the -- one of those parameters?

DR. SHEPPARD: Essentially, it gives -- it says for the same -- let's see, that column is the cumulative -- for essentially the -- assigns the same frequency to plume length or anything ranging from 500 meters to 3,600 meters. So essentially, it's -- at this point it's -- it's no longer tracking as a curve. It's recording all

the results at the same level.

COMMISSIONER MOORE: Well, all right. So the same behavior is exhibited by the 10,500 kilogram line.

DR. SHEPPARD: Right. At -- at a slightly lower level. So at some --

COMMISSIONER MOORE: But it's paralleling that. And then the -- the expected behavior is happening with the 5,200. They all using the same model?

DR. SHEPPARD: We -- it's the same model, but I don't think we've -- Mark should really answer the issue of that 5,200.

MR. STREHLOW: This is Mark Strehlow again.

The Applicant --

COMMISSIONER MOORE: You have to get right into the microphone.

MR. STREHLOW: The Applicant did not model a 5200 kilogram per second case. I think both myself and Ms. Zambito said that -- that the condition is going to be 7,500 kilograms per second.

COMMISSIONER MOORE: Well, actually, stay with me on this for a second. I -- that

doesn't help me understand why that -- why the slope, or whatever set of coefficients that they used for the 5200 line, is so different from the 7500 line. I -- I'm assuming that they were used, that different models were used to produce those two lines. Is that -- would you speculate on that?

MR. STREHLOW: We did not produce these lines. I can't speculate as to how -- what models were used to -- I thought the Staff mentioned that the SACTI model was used to -- in all cases on this graph.

COMMISSIONER MOORE: In all three cases.

MR. STREHLOW: They can correct that if I'm wrong.

COMMISSIONER MOORE: Can I get clarification on that?

MR. WALTERS: Yeah, it's the same -- it's the same model. And -- and basically, to kind of clarify why -- why you have different slopes, well, part of the reason is this is a logarithmic scale, so you have to realize that if it was on a regular scale, the slopes would -- you'd see bends that looked very similar. They would just be moved out from the -- from the

corner of the axis.

The second being that -- that it's higher, based on like -- what I indicated before, on the psychometric chart, as you essentially have to put more of the evaporated water into less, smaller volume of air, it just takes considerably longer time for it to dilute down to a point where it's no longer visible.

COMMISSIONER MOORE; So you're saying it gets saturated earlier, and it just stays saturated over a long period.

MR. WALTERS: Well, I'm saying it's essentially saturated at the point, or very close to being saturated at the point of release. The question is, what -- what amount of water and what temperature is there at that exhaust point, because you have to put a certain amount of water into the exhaust in order to get the amount of heat rejection that you're looking for in the cooling tower.

COMMISSIONER MOORE: Well, let me try again, then. If -- if I took the 5200 line and I went out to about 30 percent, wouldn't I expect the same -- I'm using the jargon now, the knee, I'd expect an isotonic bend at about 30 percent.

Wouldn't I expect that to be happening out there if the model was similarly configured? And I'm not seeing it. I just see a smooth -- smooth decline.

And I -- so I'm asking why -- why don't I see the dip.

MR. WALTERS: Well, like I said, I think if -- if we were not -- if we didn't have -- have a log scale on the left-hand side, you would see three reasonably similar curves.

COMMISSIONER MOORE: So you're saying that the log scale -- I don't know. I'm just trying to think of what the math is that would -- would do that.

MR. WALTERS: And not only that, I don't have as many -- I don't have as many points on this as I would've liked, because, again, this was -- this was --

COMMISSIONER MOORE: Do I have fewer datapoints in the 5200, is that it? I'm smoothing through a -- or regressing through --

MR. WALTERS: Right.

COMMISSIONER MOORE: -- fewer points -- okay. So, okay.

Mr. Varanini, I interrupted you, and

your line of questioning. Let me go back to you and let you finish up.

MR. VARANINI: I wanted to see whether Dr. Sheppard was done with his comments, and then Mr. Strehlow had comments. I know Ms. Zambito does.

COMMISSIONER MOORE: Dr. Sheppard.

DR. SHEPPARD: No, I think just simply to clarify that last point, that when -- when you add in all the actual model impacts and the more acute nature of the turn in that -- in that curve becomes available. And obviously, we haven't seen the data for all the various points for the --

COMMISSIONER MOORE: Right. Actually, that turns out to be -- for me, it turns out to be the most believable scenario, is that we're just data short on the 5200 line, and -- makes it easier for me to understand why it would smooth out. But I guess you could argue for taking a few of the datapoints out of the 7500 and making the line smooth out, as well.

DR. SHEPPARD: I have two further points to make, and this relates to the definition of significance, as it relates to official dominance.

I think you do have to take into account

a number of factors. We certainly -- it's very common to use visual dominance as driving guideline for significance, but it's not the only factor, and it's usually, as -- as the CEC Staff have themselves pointed out, it's not -- it can be moderated by the factors.

And we would suggest that issues such as whether or not there is a blockage of particular views, whether or not there is screening from the foreground view points, most of the current information presented today has referred to KOPs 4 and 9, which are the marinas close by. We believe that those receptors have themselves, I guess, have -- have expressed a comfort level with the degree of mitigation that's being provided, and certainly the tree screening that is still going to be provided along the east side and the north side of the facility will go some way to mitigate the plumes, certainly not all of them, but would certainly screen the lower part of the plumes and the structures themselves.

We think that's a factor. And also, the fact that there has been no complaints that we're aware of on the plume. So, but either existing plumes, like the GWF plume that's there in the

photographs, or that we've disclosed, because there are a number of plume emitting facilities in the -- in the area, and we're not aware of complaints about them.

I think that really just refers to the relative level of sensitivity of those most impacted viewers visually. And I actually feel that the middle ground views from the -- from highways and more distant residences would actually be a -- more of a worst case KOP to use than the foreground views, where you're going to be seeing these plumes anyway, even when they're quite small.

COMMISSIONER MOORE: Thank you.

Mr. Varanini.

MR. STREHLOW: Yes. I -- I just have a couple of points. When I spoke earlier I mentioned, and I quoted from the SACTI user's manual that at the extreme, the variability of over prediction of the SACTI model could be in accordance with the manual, a factor of five. And then we heard that five might not be a big difference when you're talking about whether it's 10,000 or 2,000 meters.

I don't think that's a good example. I

think what we're talking about here is a difference between 300 meters, which is in my testimony for the 20 percent winter day no fog, excluding clouds case, and the 200, now corrected to 210 meters that the Staff is saying is -- is the number. We're only talking there about less than a factor of 1.5.

So I think these -- these over predictions, even a factor of two, which the user's manual states you can get in all but 60 percent of the time, or within 60 percent of the time, is a factor of two. So conversely, 40 percent of the time it's more than a factor of two. When we're talking this -- this fine point between 300 meters and 210 meters, we are assessing a degree of accuracy on the results of the SACTI model, and I just don't think it's there.

I think that's all I had.

MR. VARANINI: And Ms. Zambito.

COMMISSIONER MOORE: Ms. Zambito, do you want to come up and take the microphone, and remember that you have to speak right into it.

MS. ZAMBITO: Yes, sir.

I guess I just wanted to make a couple

of points regarding the flow rate, the 5200 versus 7500 versus 10,500. It's real important to understand, I think, that when you design a cooling tower it's nothing more than an energy balance. And therefore, your design conditions, you have to be very aware of your design conditions in order to compare the air flow rates to say whether yours is a 5200 tower design or a 7500, et cetera.

The energy balance will be very dependent on what your assumed inlet water temperature it, what your outlet temperature of that water needs to be to support your steam turbine design. It is also very dependent on your ambient conditions coming into that tower. If you have colder temperature coming in, of course, it can pick up more heat from your tower, and therefore you have less flow.

There are also some design assumptions that you make in your tower design as to how -- how conservative you want to be as an engineer, to have a little bit of room to play. And our -- and when we made the assumption of the 7500, we felt we were conservative in some of the assumptions we made for temperature. And I just wanted to make

that point.

So I guess I'm a little concerned with comparing the 5200 at this particular plant site versus the Contra Costa 7500. I do not know what their inlet design conditions are. I think that's very important to say you have an apples to apples comparison.

Number two, cell size. When you design these towers, your velocity, I can't tell you what the assumed velocity needs to be, but I do know that you can't make it too high because what happens is if it's too high, then it starts carrying water droplets with it, and creating other problems. And if it's too low, then you don't necessarily get the heat transfer that you want.

So at that particular plant, again, I don't know if they have more than the ten cells that we're proposing, or less. I don't know the design conditions assumed, so -- I do know that, as Mr. Strehlow and I said earlier, we are assuming a 7500 kilogram per second design for our facility.

COMMISSIONER MOORE: Thank you.

MS. ZAMBITO: Okay. I --

COMMISSIONER MOORE: Mr. Varanini -- oh, I'm sorry.

MS. ZAMBITO: I have several other issues I wanted to talk about.

COMMISSIONER MOORE: All right. I'm sorry, I thought you said you had just a couple.

MS. ZAMBITO: Yeah, I do.

The other thing was I would like just to point out that the Clear Flow design that Mr. Walters mentioned is the type of design that we used in our response to the capital cost that was provided to the CEC in response to their questions, 104 and 105. We gave you a table of capital costs of a wet cooling, a hybrid design, and an air cooled.

The Clear Flow design is no different than a hybrid design. It's a wet/dry type of tower. The Clear Flow trademark is based on that particular company has a -- uses a plastic design in a sensible heat transfer area, rather than a metal type design, and therefore they have a patent on it. But in essence, it's no different than a typical hybrid design. Based on performance it really shouldn't really matter. A hybrid design will affect your performance,

regardless of whether you use Clear Flow or some other.

And the -- like I pointed out earlier, the capital costs of -- in our CEC Table 104.2, which was submitted in response to Data Requests 104 and 105, the cost between a wet cooling and a hybrid is on the order of four million, and that hybrid cooling design, the dollars we were -- we submitted for that is based on the Clean Flow.

So, with that, as I said earlier, that particular hybrid Clean Flow design, noise would go up because you have more fans, it's a larger, a 14 cell unit versus the 10 that we are proposing with the wet. Capital costs are higher, as I just pointed out. L&M costs are higher. Megawatts are lower, not only because of the backpressure that the steam turbine is experiencing, but also there's a higher parasitic load, because you have additional fans. And additional pumping costs, I'll point out, as well.

So that was another point I wanted to make.

COMMISSIONER MOORE: Actually, didn't you make that in your testimony? Didn't I read that i --

MS. ZAMBITO: I did, but Mr. Walters had made some comments with this other type of design, and I wanted to make sure that it was clearly understood that our assumption was based on that type of design, which was a more conservative.

The other thing is, is I wanted to point out that the -- Mr. Walters had made a statement about there are things you could do to mitigate the megawatt loss. And one thing is you -- you would have to engage your duct burners in your HRSG in order to make up the loss on your megawatts. When you engage the duct burners, then you have higher criteria pollutants than what we talked about earlier.

I think he said that in my numbers I had submitted, they were like a .4 percent. That is assuming that I am satisfied with having a megawatt loss, as indicated. But if I wanted to make up those megawatts, then I would have to fire, and therefore I would have higher pollutants.

COMMISSIONER MOORE: Higher pollutant levels. Right.

MS. ZAMBITO: Yes. Let me see, there was a couple of other things.

The other point is, is in the operations of a hybrid tower there are two sections, as I said earlier. There is a sensible heat section, or heat transfer, as well as an evaporative cooling section. In the summertime, when you're not concerned about plumes or temperatures are high enough, you could shut off your sensible heat section of the cooling tower.

When you do that, however, please consider that you continue to have a megawatt decrease because with those coils in that section you have an increased pressure drop through the cooling tower. And you also have an increased backpressure on your steam turbine.

So even though your sensible heat section of the tower would not be operating, there still would be an efficiency loss, both on heat rate and megawatts.

With regard to the -- Mr. Walters, I believe, addressed in the event you designed a wet cooling tower versus the hybrid cooling tower, and you wished to convert in the field. The engineering part is -- is not as concerning to me as -- the engineering time necessary, I do believe a reputable company could go and redesign for you

in a relatively short time.

My big concern is the construction period that would be required to modify that tower into a hybrid type. You would be down a significant amount of time, and by that I mean I would roughly guess at least six months. If you're going to go from a 10 cell tower to something like a 14 cell tower, you would have to increase the cooling tower basin and make significant modifications. And once you're starting to talk about cooling tower basin and more fill material, et cetera, et cetera, you're talking six, eight months, maybe. Maybe even longer. I'm not exactly sure. But I know that it'd be somewhere along there, at least. So it's not that easy to do it later.

In addition, cooling tower designs, it's not cookie cutter, like you can design one for one two by one combined cycle, and use the same thing at another location. Because it's a thermodynamic, it's an energy balance type of thing, there are variations on the design. It's not that the suppliers can just use cookie cutter calculations for each, because it is site condition, ambient condition dependent. So they

are -- they do vary slightly.

MR. VARANINI: Ms. Zambito, do you know whether the company is already out in the market purchasing these types of equipment yet? Have you --

MS. ZAMBITO: Our company?

MR. VARANINI: Have you placed orders, has your company placed orders for the cooling system at this time?

MS. ZAMBITO: We have not placed an order for the Contra Costa cooling tower. We need to soon, in order to make schedules. But we have not.

The other issue was the Table 104-6, Noise Impacts. Just a clarification there, in my testimony.

That information was provided to make a point in terms of there would be noise differences with these variations in cooling designs, and they are based on the original location of the cooling tower. We do not have time to remodel that based on the relocation, so that's why I think Mr. Walters had pointed out that there were differences on the distances.

PARTY ON TELEPHONE: Is this all you

guys are going to talk about until five?

MS. ZAMBITO: I -- I think that's about all I have, unless you have any other questions.

COMMISSIONER MOORE: No, I don't.

Counsel, I'll give you one more shot at the -- at the apple here, and then we're going to listen to some comments from the public, and then we're going to wrap it up.

MS. DeCARLO: Mr. Kanemoto, do you have any comments?

COMMISSIONER MOORE: Mr. Kanemoto, you're going to have to get right next to that mic, because you have a very soft voice.

MR. KANEMOTO: Yes. Well, I -- I might want to reiterate a couple of points that I made earlier in response to --

COMMISSIONER MOORE: Well, I don't think you need to. No, don't reiterate points that you're going to make. If you've got a rebut for something that was said before, I'm pleased to hear it. But I don't need any new, or a reiteration.

MR. KANEMOTO: Well, in response to something that Dr. Sheppard just said. There was some talk about the fact that the thresholds that

have been defined do, in fact, represent a pretty low threshold of dominance, as seen from various middle ground view points. And I just wanted to make clear the fact that those thresholds were defined in terms of the impacts on those two foreground view points.

Now, if those impacts are not considered important, for whatever reason, then that's a different issue. Those criteria would change. But we assume that, for those various reasons I described, that those two view points were --

COMMISSIONER MOORE: In other words, if they weren't important either to the Commission, in other words, we made a policy call that they didn't apply, or if they weren't important in the -- in the county context, county General Plan or county visual resource assessment, then it wouldn't apply. Otherwise, you're taking as a given that, in fact, those parametrics do exist.

MR. KANEMOTO:: Correct. In other words, does this happen sometimes when the, you know, the foreground viewers who are affected are a very, very small number, or the -- the land uses are such that it doesn't seem appropriate. But in this case, based on the information of the level

of use --

SPEAKER ON TELEPHONE: Would you speak up? I can't hear you.

MR. KANEMOTO: Based on the -- the level of use that we understood from Mr. Chapman takes place at San Joaquin and Yacht Club, it seemed quite clear that it was a very sensitive location.

The other point, of course, is the fact that we disagree with the fact that large plumes would become insignificant by virtue of the fact that they're seen behind a cloud cover.

COMMISSIONER MOORE: So noted. Do you have other comments, rebut?

MS. DeCARLO: I have a couple of questions, just to -- to emphasize.

How large will -- could plumes get with Applicant's proposed numbers, the 20 percent or five percent annually?

MR. WALTERS: The -- well, taking some error with SACTI in regard, the -- the plume numbers for 25 -- 25 percent of wintertime could certainly be in the range -- in the range of three to 400 meters.

COMMISSIONER MOORE: Three to 400 meters.

MR. WALTERS: And again, that's -- that's using the 7500. I think you should also note that when SACTI indicates that it has an error factor of two, that's not always conservative error factor of two.

COMMISSIONER MOORE: Well, I -- maybe you can define that for me. What happens if it's not conservative?

MR. WALTERS: That means the actual plumes are longer than what would be predicted.

COMMISSIONER MOORE: By a factor of --

MR. WALTERS: Perhaps a factor of two.

COMMISSIONER MOORE: By up to two beyond the -- in other words, the error factor of two, I assume, allows for that. You're saying that's in fact a factor of four? So it's two times two? Or you're saying --

MR. WALTERS: Actually, the manual isn't clear on if the two is in both directions.

COMMISSIONER MOORE: Okay.

Okay. Counselor.

MS. DeCARLO: Let's see. Mr. Kanemoto, would the tree screening that Applicant is -- is being required to do for mitigation, or that Staff has proposed, would that reduce the plume -- plume

significance to levels of insignificance?

MR. KANEMOTO: In my opinion, it would have very little effect because the plumes are much higher than the -- the trees would be. And they would be visible behind the tree barrier.

MS. DeCARLO: The Applicant had mentioned that there are other plumes in the vicinity, specifically the GWF plumes. Are those plumes as dominant as those that would be generated by the proposed Unit 8?

MR. KANEMOTO: In general, our observation so far is no. You know, the proposed cooling tower is substantially larger than the GWF plant, although I don't know anything about the operational characteristics of that plant.

From the point of view of the -- the foreground view points of concern, the Yacht Harbor and the Yacht Club, the other plumes are not really relevant to the effects that they experience. Those other plumes are not particularly visible from their -- their location.

MS. DeCARLO: Mr. Walters, even with any potential hit on efficiency, wouldn't the proposed Unit 8 still be considerably more efficient than the conventional boilers?

MR. WALTERS: Yeah. Combined cycle system is around 58 percent efficient, as opposed to somewhere in the low 30s for a conventional power boiler, and we're talking about a very small hit on that 58 percent, maybe down to 57.8, 57.7.

MS. DeCARLO: Do you have any further comments on your confidence using SACTI?

MR. WALTERS: I think it should be clear, when we talked about things like the fact that the model all of a sudden jumps from predictions, that that's due to the fact that it basically takes things in specific 35, 36 plume categories. That jump would be a smooth curve if it were allowed -- or understood hourly modeling and could model every single combination of wind speed and -- and temperature and relative humidity.

So the fact that it jumps just means that at -- at that particular point of view, it's -- and that particular category it's looking at, and categories worse than that, it predicts a number greater than that specific one, and just the next category down, instead of having a smooth curve to it, it jumps a little bit quicker than you might think it would.

But in isotonic relationship with plumes it is, with any of the conditions, is expected as -- because as you get closer to 100 percent relative humidity and cold temperatures, it takes considerably more dilution to get down past the saturation curve.

COMMISSIONER MOORE: Well, I'm presuming that there's a non-linear relationship that at some point you reach -- you're at no saturation and all of a sudden you reach super-saturation, and you just get something. And you may have to -- have to climb a pretty steep curve point to get there. I'm assuming that -- that that's a lot of what's happening.

MR. WALTERS: Well, I think -- maybe it's -- to understand it, if you did have a foggy condition and -- which was, you know, a true hundred percent relative humidity super-saturated condition already, you know, the model will essentially predict an infinite plume. And, of course, it will -- how can the water evaporate when there's no capacity in the air for it to evaporate.

But we've already, you know, taken -- taken those kind of hours out of our assessment.

COMMISSIONER MOORE: Understand.

Counsel.

MS. DeCARLO: If I could just ask the Applicant, or the Committee. The Applicant had referred to a table with regards to the costs of -- of the potential hybrid system. And a table wasn't included in the supplemental testimony, and we can't find any in data responses. So I -- I was just hoping for some clarification as to where that table was.

COMMISSIONER MOORE: Can you, Mr. Varanini, can you make sure that the Committee and Staff get a copy of that table that was referred to?

MR. VARANINI: Sure. I think, just as another point, there are about four other minor areas that we had some concerns about in conditions. We'll simply file them with the Staff and with the Committee today. They are in the nature of quasi-editorial, and I don't want to take up your time. But just so we can get those into the record today, as well.

COMMISSIONER MOORE: All right.

Well, let me shift gears. Are you through, counsel?

MS. DeCARLO: Yes, I believe we're through.

COMMISSIONER MOORE: All right.

Mr. Chapman, you're here in Intervenor status. Do you want to offer any comments after this exchange? And you also will have to speak very close to the mic.

MR. CHAPMAN: With regards to the visual plume?

COMMISSIONER MOORE: Yes. Well, you've been here through the entire proceeding, so the floor is open for other items, as well.

MR. CHAPMAN: Okay. There -- at this time, then, I'll -- for the record, the Applicant has already submitted to you the stipulation that was agreed to between Sportsmen Yacht Club and Mirant Corporation.

Just for the record, I will give you -- at the general membership meeting of April 6th, of Sportsmen's Yacht Club, the motion to approve the spirit of the stipulation, pending some legal review and things, was approved by a unanimous vote.

We will be submitting a resolution signed by the Board of Directors that is -- also

have been unanimously agreed to resolve that the stipulation before the State of California Energy Resources, Conservation and Development Commission by and between the corporation and Mirant Delta LLC, in the matter of the application, is hereby true and correct and resolved to.

The only other comment that I wanted to make now, in the -- in regards to this case, is more general as to the process of being an Intervenor and things.

The -- throughout this case, I think we at Sportsmen believe that we have been listened to by everyone involved. I believe the -- the Applicant has heard our comments. I believe the Staff has heard our comments. It took us the time period that we've traveled through, it took us that time period to be understood, though. And as an Intervenor and as a neighbor to a power plant, we are not going to have very many opportunities to do this. And the same level and -- that Staff and the Commission are educating themselves as to the particulars of this project, and other projects, I can understand how that's going to accelerate with the numerous projects that are before you.

I just want to caution the Commission and Staff to the pressure that you're receiving from outside political sources, that that education process is never going to accelerate for the neighbors and the Intervenors of a particular project. Those neighbors and those Intervenors that are solely concerned with a singular project are always going to need a reasonable amount of time to get up to speed so that we can communicate with the Applicant and the Staff at a level that they understand what we're trying to give them.

Other than that, I thank everybody here. It -- it has been an education.

COMMISSIONER MOORE: Well, thank you. I appreciate those comments.

We had people who were on the phone line who would like to make comments. If you'd like to identify yourself for the record, and offer us your comments, it's time.

MR. BOYD: Okay. This is Mike Boyd, of CARE. I --

COMMISSIONER MOORE: Do you want to identify what CARE is?

MR. BOYD: Californians for Renewable Energy, Inc.

COMMISSIONER MOORE: Okay.

MR. BOYD: On the 31st of March, I submitted a request for consideration on the fact that the air district needs to deny permits because they can no longer issue the permits to construct and operate, because the BAAQMD has been notified by EPA that they're in non-attainment for ozone. And I was curious if any of the witnesses had received that and read it, and had any response to that.

COMMISSIONER MOORE: Well, I'm not sure that a response to that would be appropriate in this forum. Right now, we're not in charge of what the AQMD is doing, and we depend on them for independent rulings. So I'm not sure that anyone here is poised to answer your question.

What's your next point?

MR. BOYD: Well, I don't quite understand what your -- your response was there. You're --

COMMISSIONER MOORE: Let me see if I can try again.

MR. BOYD: -- air quality is on the -- okay.

COMMISSIONER MOORE: This is the

California Energy Commission, and we work in partnership with the air quality districts, including the State Air Resources Control Board, and when their jurisdiction is exerted, we're not in a position to either refute it, change it, or -- or in some other way modify it.

So having a point about the way they make their rules is not something that we can affect, and I'm not sure that anyone here, including the Applicant or my Staff, would have an opinion on it, other than maybe a personal opinion, but that -- that doesn't have any place in these hearings.

So I can't go anywhere with your question.

MR. BOYD: Your answer is, then, that you -- the air district, you have no jurisdiction.

COMMISSIONER MOORE: I don't have any jurisdiction. There are frequently times when I wish I did, but --

MR. BOYD: Okay.

COMMISSIONER MOORE: -- I don't.

MR. BOYD: But you are basing your decision on the documents that have been prepared by the air district. You're basically certifying

that they're complying with the -- the federal requirements under the Clean Air Act. Isn't that true?

COMMISSIONER MOORE: No, that's not --

MR. BOYD: In order to approve the project, you have to comply with the Clean Air Act, and their -- their having an inability to comply with the requirements for ozone non-attainment.

COMMISSIONER MOORE: I -- I'm not in a position --

MR. BOYD: So now how can they issue -- you -- you have to get a permit to construct from them in order to issue your permit, don't you?

COMMISSIONER MOORE: Yeah. I -- I have no way to go with the argument. You're going to have to take that argument up with CARB.

What's your next point?

MR. BOYD: Okay. My other question is, is there yet a biological opinion on this case?

COMMISSIONER MOORE: Is there a biological opinion. I'm not --

MR. BOYD: Right. From U.S. Fish and Wildlife Service, has the biological opinion, pursuant to Section 7 consultation requirement,

been issued for this case yet?

COMMISSIONER MOORE: Hang on. I'm going to look to Staff. Is -- did we request a biological opinion, and is there one on file?

MS. DeCARLO: We have. There is not one yet. I believe it's still -- and the Applicant can correct me on this -- they're trying to get a Section 7 process going. They had originally been through a Section 10 process, and --

COMMISSIONER MOORE: What's a Section 7 process, as --

MS. DeCARLO: It's where they're asking the Army Corps of Engineers to request consultation with the U.S. Fish and Wildlife Service.

COMMISSIONER MOORE: So this is -- this is with regard to the intake and the outfall systems, and -- am I correct?

MS. DeCARLO: Right. And with just general construction impacts.

COMMISSIONER MOORE: Okay. And so we would -- we would normally ask them for an opinion as a routine measure, the same way that we would ask WAPA to come in and comment on -- on line connection?

MS. DeCARLO: Correct. And in our conditions there is a requirement that they receive a biological opinion.

COMMISSIONER MOORE: And so the strict answer to the question that was asked is there is no opinion that's come back to us, as yet.

MS. DeCARLO: Correct.

COMMISSIONER MOORE: Okay.

MR. BOYD: Has it been applied for?

COMMISSIONER MOORE: Yeah. She just said -- she just said yes, it was, but it has not come back.

MR. BOYD: Okay. And my next question, then, would be what will be the process for the public to participate in that opinion, because that opinion affects the mitigation that will be proposed for biological resources.

COMMISSIONER MOORE: You know, I honestly don't know the answer to that. That happens in the federal forum, and it's outside -- outside the jurisdiction of this agency. And it comes to us from the federal government, so I'd say they're -- you'd have to contact Fish and Wildlife to get an answer to that question.

MR. BOYD: Of whether or not that --

COMMISSIONER MOORE: How to participate, because I -- I don't have the answer for you.

MR. BOYD: Okay. Now, then my other question is, is it your intent to close the record today on this case, on biological opinion -- I mean, on the biological resource impact, in the absence of a biological opinion from the U.S. Fish and Wildlife Service?

COMMISSIONER MOORE: We'll -- actually, the Hearing Officer is reminding me that the record will stay open until we -- until we get that.

MR. BOYD: Okay. Then I would also request that you keep the record open until such time as there is a PSD permit issued by the air district, because they cannot issue that permit until the biological opinion has been approved and agreed to by the EPA.

COMMISSIONER MOORE: I'll take your advice in heart, and we'll use that as -- when we make our decision.

MS. DeCARLO: I can clarify --

MR. BOYD: So am I correct, then, to interpret that when you close the record at the end of the hearing today you will not close the

record on the biological resources or the PSD permit.

COMMISSIONER MOORE: No, you're -- you can understand that we won't close the record on the biological opinion and that the air district permit will be still open until we determine all the relevant pieces have been submitted, but I -- I'm not conditioning it on the PSD permit.

MR. BOYD: Oh, okay. That's sufficient. Okay, thank you. That's all I have.

COMMISSIONER MOORE: Anyone else who would like to comment?

MR. HAWKINS: Yeah. This is Joe Hawkins, a citizen of Pittsburg.

I sent you guys some evidence concerning the air quality and health issues. It was formaldehyde from a -- information from a Dr. Thrasher. One was 1987, the other was 1990. I was curious to what you guys came up with after you received that.

COMMISSIONER MOORE: Well, I'm looking around the room, and I -- I will tell you my office didn't get a copy of that, and -- and Staff doesn't seem to indicate that they have a copy either. So --

MR. HAWKINS: It's in the docket. I have a receipt for it.

COMMISSIONER MOORE: I -- I don't have any record of it in the docket. I don't --

MR. HAWKINS: It was done electronically.

COMMISSIONER MOORE: -- I don't know what to tell you. It's not -- not received in this case. When did -- do you know when you sent it, date --

MR. HAWKINS: I don't know the exact date. It was about a couple of weeks ago.

COMMISSIONER MOORE: Did -- certified mail?

MR. HAWKINS: No, I did it through the docket unit. I sent it all the people involved in the case, and to the docket. And I've got a receipt.

COMMISSIONER MOORE: We'll institute a search, best I can do at this point. We don't have it.

MR. HAWKINS: Oh. Until that's been reviewed, are you guys going to close the air quality and health issues?

COMMISSIONER MOORE: Right now, for all

the -- all I can use is what's in the docket, and --

MR. HAWKINS: It's in the docket.

COMMISSIONER MOORE: -- if something shows up that was either docketed in another case, or inadvertently set aside, then we'll reopen the record to take it into account. Otherwise, it is our intent to close the record.

MR. HAWKINS: Okay. Well, I have a problem with that, because it shows that formaldehyde causes autoimmune diseases, and that's something you guys didn't look over in the health --

COMMISSIONER MOORE: Was this by e-mail?

MR. HAWKINS: Yeah.

MS. ROSS: He needed to follow it up with 11 copies. Did he do that?

COMMISSIONER MOORE: Well, I don't know. Did you send 11 copies in addition?

MR. HAWKINS: I sent -- sent it electronically, and that's the way I was told I could do it.

MR. BOYD: Yeah, he was given approval to do that by the Commission earlier --

MS. ROSS: Okay. It's my -- this is

Priscilla Ross, from the Public Advisor's office. And it's my understanding that Mr. Hawkins withdrew as an intervenor in this case. And when he submits an e-mail, it's my understanding that dockets sends a message to him which says he must send 11 copies in order for it to be distributed to Staff. And it's my understanding that he didn't do it in this case, or it would've been distributed.

COMMISSIONER MOORE: Okay. Well, we'll -- we will institute a search, and see if we can find that docket -- that item, excuse me, and include it in our deliberations.

Other items?

MR. HAWKINS: Yeah, there was some other information I sent, too, on health issues. I sent a whole bunch of e-mails on health issues.

COMMISSIONER MOORE: Well, Mr. Hawkins, we'll institute a search, and we'll, believe me, if we can find something with your name on it, we'll include it in our record.

MR. HAWKINS: Okay.

COMMISSIONER MOORE: All right.

Other items? Anyone else?

MR. HAWKINS: I have one other thing I

wanted to bring out. When I was in the first workshop with you guys, on this 00-AFC-1, the same thing happened. You guys spent the whole time talking about plumes. And personally, I think the plumes look good, because I'm from Amarillo, Texas, and they remind me of tornadoes. But, you know, as far as -- as wasting time, this is a time waster, is what I'm seeing. You guys should be talking about more important issues, like what's in those plumes, rather than what they look like. You know.

And this -- this is -- I find that highly, you know, it's time wasted. It's a waste of time. It's like you guys are stalling.

COMMISSIONER MOORE: Well, from this side of the dais, I'll tell you, if there was a way to get -- to get a shorter -- a shorter testimony period on this, we'd probably go for it in a heartbeat.

Other points that you want to raise?

MR. HAWKINS: No, that's about it.

COMMISSIONER MOORE: Okay. Thanks very much.

All right. With that, is there anyone else in the audience here today who would like to

comment to us?

Seeing none, I'm going to bring this back to the dais. And Mr. Shean, I'm going to turn it back to you and to wrap this up.

HEARING OFFICER SHEAN: Okay. Well, as I indicated at the top, what our proposed schedule is, we'll distribute the CDs now. Do we have any graphics that are being submitted? And there was one request on the -- on the cover, and I think the URS people were going to consider working on that.

Is there either a -- a GIF or an EPS file, or something -- the visual on it?

MR. VARANINI: When do you need it by? When would you like to have that?

COMMISSIONER MOORE: End of the week. Friday. Friday noon.

HEARING OFFICER SHEAN: Okay. That's it.

COMMISSIONER MOORE: All right. We're going to close this, and close the record.

MS. DeCARLO: A procedural question. Does the Committee need any of the visuals that we have submitted today on electronic form or anything else?

COMMISSIONER MOORE: I'm assuming that they're all available to us on CD. Is that right? Burn a CD for us?

MS. DeCARLO: They could be made available.

COMMISSIONER MOORE: And could we also have, if you wouldn't mind, these -- these two graphs that were submitted, so we can have those in PDF or -- whichever is easier.

Actually, right, these are hand-drawn, so PDF or bit map would be fine.

All right. We will adjourn. With that, we are adjourned. Thank you.

(Thereupon the hearing was adjourned at 4:40 p.m.)

CERTIFICATE OF REPORTER

I, VALORIE PHILLIPS, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing Energy Commission Evidentiary Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said Hearing, nor in any way interested in the outcome of said Hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 4th day of April, 2001.

VALORIE PHILLIPS